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AN EDUCATION PRICE INDEX FOR THE COUNTY OF ATHABASCA

by



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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

FALL, 1969

UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "An Education Price Index for the County of Athabasca," submitted by Donald Marcus Richards in partial fulfillment of the requirements for the degree of Master of Education.

ABSTRACT

The purpose of this study was to compare the effect of rising price levels on the educational expenditures of the County of Athabasca to the effect of rising price levels on the educational expenditures of the whole of Alberta.

The study was carried out in two stages. The first stage entailed the development of a set of price indexes to measure changes in the price levels of educational inputs for the County of Athabasca. The second stage of the study consisted of a comparison of these indexes to the educational price indexes for educational expenditures for the Province of Alberta.

With the exception of the price of instruction, the prices of educational inputs for the County of Athabasca tended to change in patterns very similar to the prices of educational inputs for the whole of Alberta. The price of instruction tended to fluctuate more widely in the County of Athabasca than in the whole of Alberta. When an attempt was made to assess the effect of training on the price of instruction, the wide fluctuations in prices were magnified.

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ACKNOWLEDGEMENTS

The advice and assistance of Dr. P. J. Atherton, the writer's advisor, has been much appreciated.

The writer is indebted to the office staff of the County of Athabasca as well as to many individuals in government, industry, and business for their assistance in the gathering of the data for this thesis.

Finally, the writer wishes to acknowledge a debt of gratitude to his wife, Pat, without whose patience and sacrifice the thesis would not have been written.

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CHAPTER I

THE STUDY

I. INTRODUCTION

The purpose of this study was to determine the effects of rising price levels on the educational expenditures of the County of Athabasca. Furthermore, these effects were compared to the effects of rising price levels on the educational expenditures of the whole of Alberta. However, since rising price levels in education are a part of the larger problem of inflation in the general economy, it was necessary to provide a discussion of inflation.

Inflation, according to Benson, may be defined as ". . . simply a widespread rise in prices raising the average level" (3, p. 97). A more detailed description of inflation, as provided by the Research Division of the American Institute of Certified Public Accountants is as follows:

The amount of goods and services in general that can be purchased with any given amount of money changes from day to day, month to month, and year to year. When prices in general. . . are rising, we say that the value of the dollar is falling and characterize the situation as a period of inflation. . . (7, p. 27).

Inflation tends to reduce the purchasing power of money and, according to Atherton, can be attributed to demand-pull factors or cost-push factors (1, p. 1). The demand-pull factors are associated with the rise of prices of goods and services due to an increase in demand.

The cost-push factors are associated with a rise in the prices of goods and services due to an increase in the cost of production.

Mounton, in discussing cost-push factors asserts:

Two factors. . . are of decisive influence in determining the trend of prices: (1) the rate of technological progress--which governs the output per man per hour; and (2) the wage and salary rates paid to employees. Increasing productive efficiency--a cost-reducing factor--exerts pressure toward lower prices. Increasing wages--a cost-raising factor--exerts pressure toward higher prices (5, p. 170).

He further states:

. . . It appears certain that continuing increases in wage rates will be a powerful force working for progressively higher prices. . . . And the economic and political power of modern labor organizations is such that continued pressure for higher rates of pay is to be expected (5, p. 171).

The importance of labor inputs as a factor contributing to inflation may, in part, account for the fact that, as Atherton mentions, some sectors of the economy may suffer to a greater degree from the effects of inflation than others (2, p. 9). Education may well be among the sectors of the economy affected to a high degree by inflation.

Educational Expenditures

There is evidence to suggest that educational expenditures are significantly affected by rising price levels in the economy at large. Indeed, research on the nature of the inputs of education as well as empirical studies of expenditures lend support to this belief.

Wasserman claims that labor inputs account for a major proportion of the expenditures of a school authority (8, p. 52). For example, an examination of the expenditures of the County of Athabasca provides

evidence to support Wasserman's claim. The Auditor's Financial Statement for 1967 shows that approximately fifty-eight per cent of the expenditures of the County of Athabasca, excluding capital expenditures, debt charges, and provision for deficits from previous years was provided for educational salaries (4, p. 13). Other categories, such as administration, plant operation and maintenance, and conveyance are partly composed of labor inputs. Thus, it appears as though education has a high proportion of labor inputs and will, therefore, be affected by rising price levels.

Empirical studies in the field of educational finance also lend support to the thesis that inflation has been an important factor in contributing to increasing educational expenditures. Mowat and Atherton claimed that inflation, increasing quality of education, and increasing enrollments were the causes of increasing educational expenditures (6, p. 36). They concluded that inflation appeared to be a more significant factor than increasing quality and increasing enrollments (6, p. 36). A major study attempting to isolate the effects of rising price levels has been done by Atherton (1). His study, based on the expenditures on educational inputs for the Province of Alberta, provided evidence for the fact that rising price levels could account for as much as eighty-two per cent of the increase in expenditures on education per weighted pupil (1, p. 214).

II. THE PROBLEM

The study of the effects of rising price levels, by Atherton, concentrated on price and expenditure data at the provincial level of aggregation. He suggested that his study be validated at the level of a local authority in order to determine the applicability of his general price series to a specific case (1, p. 220). This test of applicability constitutes the major problem of this study.

Statement of the Problem

The problem of the study was phrased as follows: What was the degree of applicability of the Alberta Education Price Index to the County of Athabasca? The study was completed in two stages.

Stage I: A price index appropriate to the measurement of change in the price level of educational inputs in the County of Athabasca was compiled.

Stage II: The Education Price Index for the County of Athabasca was compared to the Education Price Index for Alberta.

Procedure for Stage I. An education price subindex for the County of Athabasca was compiled for each of the following categories of educational inputs:

1. Administration.
2. Instruction.
3. Instructional Aids and Supplies.
4. Plant Operation and Maintenance.

5. Conveyance.
6. "Other Inputs."

Procedure for Stage II. A comparison was made between each of the education price subindexes for the County of Athabasca and the appropriate educational price subindex for Alberta.

III. SIGNIFICANCE OF THE STUDY

The results of each of the two stages of this study have different significance in terms of their applicability.

The results of Stage I--The Education Price Index for the County of Athabasca--have immediate applicability. The index and subindexes resulting from this stage may be immediately applied to the expenditures of the County of Athabasca to deflate the expenditures to constant dollar values. This procedure will control for the effects of inflation in the expenditures and allow the resulting figures to be examined in terms of the effects of increasing enrollment and increasing quality.

The results of Stage II--the comparison of the Education Price Index for the County of Athabasca to the Education Price Index for Alberta--help to determine the applicability of the Education Price Index for Alberta to a single school authority. Where the two indexes are relatively similar, indexes compiled at the Provincial level of aggregation may be applied to the expenditures of the County of Athabasca with some assurance that the resulting conclusions will be valid.

IV. DEFINITIONS

Although a full discussion of each major term used in this study is provided at an appropriate place in the study, brief definitions of some of the most commonly used terms are set out below.

Educational inputs. Those goods and services, exclusive of capital expenditures and debt charges, which are purchased by a school authority for use in the operation of schools.

Expenditures. The total monies disbursed by a school authority.

Operational expenditures. The monies disbursed by a school authority for educational inputs.

Base year for prices. That year chosen in which the price index will be 100 and to which the price levels in other years will be compared.

Weight. The number representing the importance of an educational input or category of inputs in relation to the total of all inputs. The weight of an input is measured in terms of money disbursed for that input in relation to all other inputs.

Base year for weight. That year chosen from which the weight for each major category of inputs will be calculated.

Price relative. The price of a unit quantity of a particular educational input expressed as a per cent of the price of the same input in the base year for prices.

Price relatives series. The series of numbers composed of the price relatives of a particular educational input for each of the years of the study.

Subindex number. The weighted average of the price relatives of all major educational inputs in a particular category such as administration, instruction, plant operation and maintenance, instructional aids and supplies, conveyance, and "other inputs." A subindex number was found by multiplying each of the price relatives by its weight and summing all of the resulting numbers.

Subindex. The series of numbers composed of the subindex numbers for a particular category of educational inputs for each of the years of the study.

Index number. The weighted average of all of the subindex numbers for a particular year. An index number for a particular year is found by multiplying each of the subindex numbers for that year by its weight and summing the resulting numbers.

Index. The series of numbers composed of the index numbers for educational inputs for each of the years of the study.

V. ASSUMPTIONS

In order to compile an Education Price Index for the County of Athabasca and compare this index to the Alberta Education Price Index, two major assumptions were made.

1. It was assumed that an increase in the price of a unit of a good or service was due to a general rise in prices.

2. It was assumed that there was little if any substitution of educational inputs from year to year.

VI. LIMITATIONS

The price data used in this study were obtained directly from the records of the County of Athabasca or were representative of prices that were applicable to the County of Athabasca. Thus, the subindexes and indexes compiled are applicable only to the County of Athabasca.

The comparisons of the price subindexes of educational inputs for the County of Athabasca to the price subindexes of educational inputs for Alberta were valid only for the years 1959 through 1965. Furthermore, judgements as to the differences between the two series, were made on a subjective bases since no probabilistic methods appeared to apply to this type of data.

VII. DELIMITATIONS

This study was delimited to an examination of the price level of educational inputs of the County of Athabasca for the calendar years 1959 to 1967. The year 1959 was chosen as the first year because it was the year that the County of Athabasca came into existence. Even though 1959 was the first year of the existence of the County of Athabasca, it does not appear to have been atypical in respect to expenditures. The year 1967 was chosen as the last year of the study

because it was the last year for which price level and expenditure data could be obtained.

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CHAPTER II

EDUCATION PRICE INDEXES

I. INTRODUCTION

The effects of inflation have been known for a long time. Some early attempts to account for inflation expressed money in terms of its buying power. A law passed in Massachusetts in 1780 providing for repayments of notes issued by the State provides one example. The law states:

Both Principal and Interest to be paid in the then current money to the said State, in a greater or less Sum, according as to Five Bushels of Corn, Sixty-eight Pounds and four-seventh Parts of a Pound of Beef, Ten Pounds of Sheeps Wool, and Sixteen Pounds of Sole Leather shall then cost, more or less than One Hundred and Thirty Pounds current money, at the then current prices of the said articles (7, p. 62).

Since the time of the above law, the method of reporting the effects of inflation have been greatly simplified but the basic principle remains essentially unchanged--the relation of the value of money to its buying power.

The most common method in use today to report and measure the effects of inflation is the price index.

There are many currently compiled indexes that measure changes in prices of particular commodities or groups of commodities. . . for various segments of the economy and for the economy as a whole (7, p. 63).

These indexes are of two types:

- (1) those that measure relative changes in the prices of specific commodities or related groups of commodities, and

- (2) those that measure relative changes in the price level prevailing in the economy as a whole. . .(7, p. 63).

Clearly, educational inputs are not representative of all of the goods and services consumed in the larger economy. Thus, education price indexes are of the first type cited.

An index number is basically a ratio of the price of a good or service in a given year expressed as a per cent of its price in the base year. The education price index number for a given year then would be the price of a representative sample of educational inputs in that year expressed as a per cent of the same sample of educational inputs in the base year. Thus, if the base year of an index was 1957 and the index number for 1960 was 122, a representative sample of educational inputs that cost \$100 in 1957 would cost \$122 in 1960.

As Atherton points out, the theory on which indexes are based is very complicated (1, p. 30). However, the compilation of indexes and limited use of them can be carried out without expertise in the underlying theory. This chapter serves to review relevant literature on price indexes as it serves to explain and illustrate the computation of education price indexes.

II. COST AND PRICE

Although the words cost and price are often used synonymously, it is important to make a distinction between these two terms as they apply to a consumer. The price of a good or service is that sacrifice which a consumer must make to procure that good or service. If a certain amount of money must be expended to obtain a unit good or service, then

that amount of money may be considered the price of that good or service. Cost, on the other hand, refers to the total expenditure for particular goods or services. As Wasserman points out, costs can be increased by increased prices of goods or services, increased quality of goods and services, or increased quantity of goods or services (9, p. 2). Thus, price changes will affect cost changes but cost changes will not necessarily affect price changes.

The following example chosen from the educational setting will serve to illustrate the difference between cost and price. In 1967, the County of Athabasca expended \$817,114 for goods and services used in instruction (3, p. 13). The \$817,114 can be considered the cost of instruction. The average salary paid to teachers in that year was \$6,144.22 per annum. This figure (\$6,144.22) can be considered the price of one of the goods and services used in instruction. Thus, if the price increased beyond \$6,144.22, the cost would necessarily increase. The cost could also increase without an increase in price simply by the purchase of more goods or services.

III. QUANTITY AND PRICES

Although indexes may be used to measure quantitative changes over time, price indexes are normally based on the relative stability of quantities. There are two important relationships between prices and quantities that usually have been considered in the development of price indexes. These are the relationship between quantities and price relatives of individual goods or services, and the relationship between

the quantity of homogeneous categories of goods and services and the total of inputs.

Quantities and Price Relatives

It is essential in the development of price indexes that the concept of price remains uniform in the consideration of any particular good or service (7, p. 90). Many kinds of prices may be chosen to calculate the price relatives of commodities but once a basic unit of quantity of a single good or service has been chosen, consistency is important. The Staff of the Accounting Research Division of the Institute of Certified Public Accountants notes:

Prices may be quoted before or after deducting discounts. Sales and excise taxes, freight, and handling charges are among the items that may or may not be included in price quotations. Since two sets of prices are needed for the construction of a price index number--those in effect in the base period and in the period with which the base is being compared--"price" must mean the same thing in both cases. These prices should be the actual exchange prices for comparable quantities of goods and services (e.g., prices for units sold in carload lots should not be compared with the prices for units sold by the dozen) (7, p. 90).

For this reason, the price data used in this study represent the prices of constant quantities of educational inputs over the entire nine years of the study.

Proportion of a Good or Service of Total Inputs

The ratio of the expenditure on a homogeneous category of educational inputs to the total expenditure has been referred to as the weight of that category of inputs. From Atherton's study, it is evident that there are two main problems to overcome in determining the weights of categories of educational inputs--the difference in expenditure

patterns between different authorities and the change in expenditure patterns of a single authority over time (1, pp. 42,43). Since this study is to deal with a single authority, it is the second problem that is of major concern.

According to Atherton, the problem of changing expenditure patterns could be overcome by changing the weights of the expenditures from year to year but this, while increasing the accuracy of year to year comparisons, would reduce the analytical utility of the series as a whole (1, p. 42). Fisher, in dealing with the problem of weights, claims that the weights of components could be wrong by 50 to 100 per cent with little change in the resulting index (4, p. 447). He also warns that errors may be more significant if the component has a heavy weight (4, p. 440). Unless there are extremely large changes in the inputs over time, a fixed weight, based on the relative importance of inputs in any given year will reflect accurately price level changes (7, p. 101).

IV. QUALITY AND PRICES

"One of the most difficult problems in compiling actual indexes is to avoid the confounding of qualitative changes and price changes in items" (9, p. 26). As this quotation expresses, it is highly important and very difficult to isolate changes in price level from changes in quality. Three different types of inputs, as discussed by Wasserman, should be viewed in different ways when considering the price-quality problem. These three inputs are instruction (9, p. 27), non-instruction personnel services (9, p. 47), and supply items (9, p. 50). Each of these classes of inputs will be examined separately.

Quality and Price of Instructional Services

Because of the relatively large proportion of expenditures that may be accounted for by instructional salaries, any errors that may have been made in compiling this subindex will have caused errors in the final index. Instruction is also the area in which quality changes were the most difficult to determine.

Atherton, in his review of the literature, found that there was evidence to suggest that training is a utility-determining characteristic but that experience is not (1, p. 35). However, he also stated that evidence was not conclusive enough to substantiate any particular assumptions about quality of teaching services (1, p. 37). To overcome this problem, he tested the effect of two alternate assumptions about the quality-training relationship:

1. Levels of certification are not a utility-determining characteristic in the quality of teachers services (1, p. 69).
2. Levels of certification are a utility-determining characteristic in the quality of teachers services (1, p. 69).

While neither of these assumptions could be said to be better than the other, the use of them served to illustrate the effect of assumptions about the quality-training relationship on education price indexes.

Quality and Price of Non-Instructional Services

Wasserman points out that changes in the salaries of non-teaching personnel may be associated with adjustments in price level or they may be compensations for changes in competency (9, p. 47). He also suggests that alternate assumptions in regard to wages and salaries of this type will have much less effect on the final index than will alternate

assumptions about teachers' salaries (9, p. 47).

Atherton chose to compile subindexes on the basis of homogeneous categories of inputs as they related to the operation of a school authority (1, p. 67). Wages and salaries of non-instructional personnel were involved in the compilation of six of his seven major subindexes (1, p. 67). Although quality differentials may have been implied in his definition of various occupational categories, he did not make any alternate assumptions regarding quality of non-instructional services (1, p. 67).

Quality and Price of Supply Items

If changes in the quality of supply items occurred without proportional changes in prices, an error in the price relative of the items would have been produced. In compiling education price indexes this type of quality change is not as severe as it might seem (9, p. 50). The supply inputs account for about ten to fifteen per cent of the total inputs. Thus, a rather large error here, for example, twenty per cent, would change the final index by less than three index points. Secondly, the supply items in education tend to be of a rather stable nature over short periods of time since no major technological revolutions have taken place in education during the time period of this study (1, p. 48).

V. PRICE INDEXES IN EDUCATION

Several education price indexes have been developed. With two exceptions, the indexes have been compiled in the United States. The two exceptions are a British contribution and a Canadian contribution.

National Education Association Indexes

The National Education Association has conducted three studies requiring the development of education price indexes. The first two studies involved the increases in school expenditures over the years 1914 to 1924 and 1914 to 1930 respectively (9, p. 110). The third study again involved the period 1914 to 1930 (6). The most important difference between the first two studies and the third one was in the method used to compile the index.

In the first two studies, the Consumer Price Index was used to deflate expenditures (1, p. 48). In the third study, a fixed base, weighted price relative type of index, specifically compiled from educational inputs, was used to deflate expenditures (1, p. 48).

Lorne Woollatt's Indexes

Although Lorne Woollatt has compiled a number of education price indexes, three of the more important were for New York State (12) and for Baltimore (10 and 11). Woollatt's indexes were of a fixed base, weighted price relatives nature compiled from various components (1, p. 51). Woollatt's first index (12) was compiled from a salary component and four non-salary components (1, p. 51). In his later studies (10, 11),

he extended the salary component to include non-professional employees and to the non-salary components, six more items were added (1, p. 52).

New York Indexes

The later New York indexes (2) were compiled from weighted price relatives of seven components (1, p. 53). These seven components were professional salaries, service worker salaries, clerical worker salaries, instructional supplies and books, maintenance, utilities, and miscellaneous (1, p. 53).

Nevada Price Index

The Nevada education price index tended to be very similar to the New York index except that the Nevada index was compiled from twenty components (1, p. 56). An important component that was used in the Nevada index that was not used in the others mentioned previously was transportation (1, p. 54).

Vaizey's Index

In Vaizey's study of educational expenditures in Great Britain (8), an education price index was developed to cover the period 1920-1955. The salary component alone of Vaizey's index was compiled from twenty-two price relatives (1, p. 54). Also, to allow for changing expenditure patterns, it was necessary to compile one index for the period 1920 to 1930, another index for the period 1930 to 1948, and then to splice the two indexes to form a single index for the period 1930 to 1948.

Hirsch's Index

Hirsch's index was developed for the purpose of an analysis of the costs of education in the United States over the period 1900-1958 (5). His index was based entirely on teachers' salaries (5, p. 20). According to Atherton, the basis of Hirsch's index tends to make the index unsuitable as a measure of the effects of inflation on overall educational expenditures (1, p. 57).

Atherton's Index

Atherton's study examined the impact of inflation on the cost of education in Alberta over the period 1957 through 1965 (1, p. 1). He developed three major indexes--the Provincial Index, the Small Area Index, and the Large Area Index (1, p. 64). The indexes were compiled from seven major subindexes--a salary subindex, an administration subindex, an instructional aids and supplies subindex, a plant operation and maintenance subindex, a transportation subindex, an auxiliary services subindex, and an "Other Inputs" subindex (1, p. 67).

In computing his Large Area Index, Atherton weighted the subindexes as illustrated in Table I.

Salary subindexes. The alternate price-quality assumptions that Atherton made necessitated the development of three separate subindexes for salaries. Salary Subindex I was based on the assumption that years of training are not a utility-determining characteristic in the quality of teachers' services (1, p. 69). This subindex was calculated from an average salary for all teachers (1, p. 71). Salary Subindex II was based

TABLE I
WEIGHTS OF VARIOUS COMPONENTS OF ATHERTON'S
LARGE AREA INDEX

Components	Weight
Salary	.545
Administration	.026
Instructional Aids and Supplies	.038
Plant Operation and Maintenance	.136
Transportation	.232
Auxiliary Services	.008
"Other Inputs"	.015

Source: P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 82.

on the assumption that years of training are a utility-determining characteristic and two levels of training were considered--one and two years in one category and three years or more in another (1, p. 71). The two separate components of the second salary subindex were weighted 0.6240 and 0.3760 respectively on the basis of expenditures (1, p. 86). Salary Subindex III was based on the assumption that years of training are a utility-determining characteristic in the quality of teachers' services and that three levels of utility exist--one year of training, two years of training, and three or more years of training (1, p. 71). The weights for these three categories were 0.4330, 0.1910, and 0.3760 respectively on the basis of expenditures (1, p. 86). The resulting subindexes were as in Table II.

The percentage increase over the previous year for each salary subindex is illustrated in Table III. The average percentage increase over the previous year was 6.10 per cent for Subindex I, 5.37 per cent for Subindex II, and 5.27 per cent for Subindex III.

Administration Subindex. To compile the Administration Subindex, Atherton used price relatives for officials' salaries, clerical salaries, office supplies, utilities, and other expenditures (1, p. 95). These were weighted according to expenditures to compile the Administration Subindex illustrated in Table IV, page 25.

The Administration Subindex climbed from 100.00 in 1957 to 119.99 in 1965. The percentage increase over the previous years ranged from a low of -1.00 per cent in 1964 to a high of 4.75 per cent in 1965.

TABLE II
ATHERTON'S SALARY SUBINDEXES

Year	Subindex I	Subindex II	Subindex III
1957	100.00	100.00	100.00
1958	110.59	110.83	110.82
1959	121.14	121.78	121.81
1960	130.70	130.18	129.95
1961	140.48	139.00	138.53
1962	146.24	143.08	142.36
1963	149.88	145.77	144.87
1964	155.70	149.22	147.71
1965	160.06	151.31	150.09

Source: P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 92.

TABLE III
 PERCENTAGE INCREASE OVER THE PREVIOUS YEAR IN THE PRICE OF
 INSTRUCTION AS MEASURED BY ATHERTON'S
 SALARY SUBINDEXES

Year	Subindex I	Subindex II	Subindex III
1958	10.59	10.83	10.82
1959	9.54	9.88	9.92
1960	7.89	6.90	6.68
1961	7.48	6.77	6.60
1962	4.10	2.94	2.76
1963	2.59	1.88	1.76
1964	3.88	2.37	1.96
1965	2.80	1.40	1.61

Source: P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 92.

TABLE IV
CHANGES IN THE PRICE OF ADMINISTRATION AS MEASURED BY
ATHERTON'S ADMINISTRATION SUBINDEX

Year	Administration Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	102.66	2.66
1959	104.63	1.92
1960	108.99	4.17
1961	112.82	3.51
1962	112.79	-0.02
1963	115.71	2.59
1964	114.55	-1.00
1965	119.99	4.75

¹Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 99.

²Calculated from column 2.

The average percentage increase over the previous year in the price of administration was 2.32 per cent.

Instructional Aids and Supplies Subindex. To compile the Instructional Aids and Supplies Subindex, Atherton used price relatives for correspondence courses, books, and supplies and aids (1, p. 104). These were weighted according to expenditures to compile the Instructional Aids and Supplies illustrated in Table V.

The Instructional Aids and Supplies Subindex climbed from 100.00 in 1957 to 120.44 in 1965. The percentage increase over the previous year ranged from a low of 0.59 per cent in 1965 to a high of 6.35 per cent in 1959. The average percentage increase over the previous year in the price of instructional aids and supplies was 2.36 per cent.

Plant Operation and Maintenance Subindex. To compile the Plant Operation and Maintenance Subindex, Atherton used weighted price relatives for salaries, supplies, utilities, and repairs (1, p. 112). The index that resulted is illustrated in Table VI, page 28.

The Plant Operation and Maintenance Subindex climbed from 100.00 in 1957 to 123.08 in 1965. The percentage increase over the previous year ranged from a low of -0.23 per cent in 1962 to a high of 5.02 per cent in 1965. The average percentage increase over the previous year for the price of plant operation and maintenance was 2.64 per cent.

Transportation Subindex. To compile the Transportation Subindex, Atherton used weighted price relatives for depreciation, insurance fees, wages and employee benefits, gas and oil, tires and tubes, and repairs.

TABLE V
CHANGES IN THE PRICE OF INSTRUCTIONAL AIDS AND SUPPLIES AS
MEASURED BY ATHERTON'S INSTRUCTIONAL
SUPPLIES SUBINDEX

Year	Instructional Aids and Supplies Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	101.55	1.55
1959	108.00	6.35
1960	110.22	2.06
1961	111.63	1.28
1962	114.12	2.23
1963	115.96	1.61
1964	119.73	3.25
1965	120.44	0.59

¹Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 108.

²Calculated from column 2.

TABLE VI
CHANGES IN THE PRICE OF PLANT OPERATION AND MAINTENANCE
MEASURED BY ATHERTON'S PLANT OPERATION
AND MAINTENANCE SUBINDEX

Year	Plant Operation and Maintenance Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	102.10	2.10
1959	103.96	1.82
1960	106.64	2.58
1961	107.83	1.12
1962	107.58	-0.23
1963	112.89	4.94
1964	117.20	3.82
1965	123.08	5.02

¹Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 118.

²Calculated from column 2.

The resulting Transportation Subindex is illustrated in Table VII.

The Transportation Subindex climbed from 100.00 in 1957 to 123.60 in 1965. The percentage increase over the previous year ranged from a low of -2.70 per cent in 1958 to a high of 12.22 per cent in 1959. The average percentage increase over the previous year in the price of transportation was 2.77 per cent.

Auxiliary Services Subindex. Atherton's Auxiliary Services Subindex was compiled from the unweighted price relatives of nursing salaries (1, p. 127). The resulting subindex is illustrated in Table VIII, page 31.

The Auxiliary Services Subindex climbed from 100.00 in 1957 to 138.05 in 1965. The percentage increase over the previous year ranged from a low of -1.33 per cent in 1962 to a high of 7.57 per cent in 1965. The average percentage change over the previous year in the price of auxiliary services was 4.16 per cent.

Other Expenditures Subindex. Atherton compiled the Other Expenditures Subindex from the Wholesale Price Index for "Fully and Chiefly" Manufactured Goods (1, p. 128). The resulting subindex is illustrated in Table IX, page 32.

The Other Expenditures Subindex climbed from 100.00 in 1957 to 109.83 in 1965. The percentage increase over the previous year ranged from a low of 0.16 per cent in 1958 to a high of 2.09 per cent in 1963. The average percentage increase over the previous year in the price of other expenditures was 1.18 per cent.

TABLE VII
CHANGES IN THE PRICE OF TRANSPORTATION AS MEASURED BY
ATHERTON'S TRANSPORTATION SUBINDEX

Year	Transportation Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	97.38	-2.70
1959	109.19	12.22
1960	114.64	4.99
1961	115.72	0.94
1962	117.84	1.83
1963	118.09	0.21
1964	123.10	4.24
1965	123.60	0.41

¹ Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 126.

² Calculated from column 2.

TABLE VIII
CHANGES IN THE PRICE OF AUXILIARY SERVICES AS MEASURED BY
ATHERTON'S AUXILIARY SERVICES SUBINDEX

Year	Auxiliary Services Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	104.95	4.05
1959	109.72	5.45
1960	117.00	6.64
1961	121.86	4.15
1962	120.24	-1.33
1963	127.94	6.40
1964	128.34	0.31
1965	138.05	7.57

¹Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 127.

²Calculated from column 2.

TABLE IX
CHANGES IN THE PRICE OF OTHER EXPENDITURES AS MEASURED BY
ATHERTON'S OTHER EXPENDITURES SUBINDEX

Year	Other Expenditures Subindex ¹	Percentage Increase Over Previous Year ²
1957	100.00	
1958	100.16	0.16
1959	101.55	1.39
1960	101.80	0.25
1961	102.77	0.95
1962	104.66	1.84
1963	106.85	2.09
1964	107.78	0.87
1965	109.83	1.90

¹Compiled from P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 129.

²Calculated from column 2.

Large Area Education Price Indexes. Atherton weighted and compiled the seven subindexes into three Large Area Education Price Indexes. Large Area Education Price Index I was based on Salary Subindex I. Large Area Education Price Index II was based on Salary Subindex II. Large Area Education Price Index III was based on Salary Subindex III (1, p. 128). The Large Area Education Price Indexes are illustrated in Table X.

The percentage increase over the previous year for each index is illustrated in Table XI page 35. The average percentage increase over the previous year was 4.60 per cent for Index I, 4.16 per cent for Index II, and 4.10 per cent for Index III.

VI. SUMMARY

In the compilation of price indexes, certain distinctions have been necessary as well as certain assumptions. A basic distinction between cost and price has been established. Quality, quantity, and price relationships have been reviewed with the intention of minimizing the problem that these relationships create in regard to prices.

Price indexes in education have been developed by educational finance researchers in the past. Atherton's study of the educational price in Alberta (1) was of particular concern to this study. His index was compiled from various weighted price relatives.

TABLE X
ATHERTON'S LARGE AREA EDUCATION PRICE INDEXES

Year	Index I	Index II	Index III
1957	100.00	100.00	100.00
1958	105.57	105.70	105.69
1959	114.70	115.05	115.06
1960	121.79	121.50	121.38
1961	127.73	126.92	126.66
1962	131.45	129.72	129.33
1963	134.44	132.20	131.71
1964	139.49	135.96	135.14
1965	143.07	138.30	137.67

Source: P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 137.

TABLE XI

PERCENTAGE INCREASE OVER THE PREVIOUS YEAR IN THE PRICE OF EDUCATION
AS MEASURED BY ATHERTON'S LARGE AREA EDUCATION PRICE INDEXES

Year	Index I	Index II	Index III
1958	5.57	5.70	5.69
1959	8.65	8.85	8.87
1960	6.18	5.61	5.49
1961	4.88	4.46	4.35
1962	2.91	2.21	2.11
1963	2.27	1.91	1.84
1964	3.76	2.84	2.60
1965	2.57	1.72	1.87

Source: Calculated from Table X, page 34.

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CHAPTER III

RESEARCH DESIGN

I. PRICE INDEXES

The education price index number for the price level of educational inputs for a given year was derived from weighted subindexes. The subindexes correspond to the expenditure categories as shown in Table XII. The subindexes are administration, instruction, instructional aids and supplies, plant operation and maintenance, conveyance, and "other inputs." These subindexes were weighted and combined to form the index.

Subindex Weights

Each subindex was weighted in such a way as to be representative of the distribution of the expenditures throughout the years of the study. The percentage distribution of the expenditures and the mean expenditure for each category is shown in Table XIII, page 39. The selection of the base year for weights has to be justified.

Fisher deals with the problem of weights, and has the following to say:

Thus the figures for weights in particular may usually be tenfold or one-tenth of the figures without appreciably disturbing the accuracy of the resulting index number (2, p. 365).

Unless the input made up a large percentage of the total and its sub-index differed vastly from others, an error in its weight did not cause

TABLE XII

EXPENDITURES ON EDUCATIONAL INPUTS OF
THE COUNTY OF ATHABASCA

Year	Adminis- tration	Instruc- tion	Instructional Aids	Plant Operation	Conveyance	Other	Total Expenditure
1959	\$22,862	\$409,925	\$25,970	\$125,851	\$207,334	\$7,932	\$799,874
1960	24,139	466,336	28,312	130,314	245,953	11,698	906,752
1961	26,531	500,184	21,640	125,850	260,031	7,227	941,418
1962	30,398	517,961	41,290	129,736	255,141	8,209	982,735
1963	28,436	549,665	31,506	127,367	260,563	5,826	1,003,363
1964	31,735	565,266	35,266	118,812	257,223	6,188	1,014,663
1965	31,140	583,849	38,003	149,207	283,228	5,653	1,091,080
1966	39,929	679,887	37,798	161,960	303,930	6,518	1,230,022
1967	46,528	813,140	63,614	154,675	326,975	6,108	1,411,040

Compiled from the Auditor's Financial Statements of the County of Athabasca #12, 1959-1967.

TABLE XIII

EXPENDITURES OF THE COUNTY OF ATHABASCA EXPRESSED AS
PERCENTAGES OF THE ANNUAL TOTALS

Year	Administration	Instruction	Instructional Aids and Supplies	Plant Operation	Conveyance	Other
1959	2.86%	51.25%	3.25%	15.73%	25.96%	0.99%
1960	2.66	51.43	3.12	14.37	27.12	1.29
1961	2.82	53.13	2.30	13.36	27.62	0.77
1962	3.09	52.71	4.20	13.20	25.96	0.84
1963	2.83	54.78	3.14	12.69	25.97	0.58
1964	3.13	55.73	3.48	11.71	25.35	0.61
1965	2.85	53.51	3.48	13.68	25.96	0.52
1966	3.25	55.27	3.07	13.17	24.71	0.53
1967	3.30	57.63	4.51	10.96	23.17	0.43
Mean	2.98	53.94	3.39	13.21	25.75	0.73

Compiled from Table XII, page 38.

a large error in the resulting index. This being the case, the problem of weighting the subindexes became somewhat less formidable. Although it may be of small consequence, a base year which represents an 'average' had the least chance of causing severe bias to the resulting index. As illustrated in Table XIII, the expenditures for the year 1965 were representative of the means of the distribution of expenditures in each category for all years. Thus 1965 was used as a base year for the weights of the subindexes. The weights for each of the subindexes of the homogeneous categories of educational inputs are set out in Table XIV.

Price Relatives

Each subindex was derived from the price relatives of a homogeneous set of educational inputs. The educational inputs for each subindex are shown in Table XV, page 42. The weights for each of the price relatives represents the relative importance of each input to the homogeneous set.

Administration Subindex. The Administration Subindex was compiled from the weighted price relatives of the secretary-treasurer's salary, the office assistant's salaries, councillors' fees, printing, office caretaker's salary, telephone rates, advertising rates, and "other inputs." The weights of each of these price relatives is shown in Table XVI, page 43.

Instruction Subindex. Three different Instruction Subindexes were compiled. These were based on the alternate assumptions made by

TABLE XIV
WEIGHTS USED IN COMPILING VARIOUS SUBINDEXES INTO
EDUCATION PRICE INDEXES

Subindex	Weight
Administration	.0285
Instruction	.5351
Instructional Aids and Supplies	.0348
Plant Operation and Maintenance	.1368
Conveyance	.2596
"Other Inputs"	.0052

Compiled from Table XIII, page 39.

TABLE XV
MAJOR COMPONENTS OF SUBINDEXES

Subindex	Components
1. Administration	(a) Secretary-treasurer's salary (b) Office assistants' salaries (c) Councillor's fees (d) Printing (e) Office caretaker's salary (f) Telephone (g) Postage (h) Advertising (i) Other
2. Instruction	Teachers' Salaries
3. Instructional Aids and Supplies	(a) Correspondence courses (b) Books (c) Instructional Supplies
4. Plant Operation and Maintenance	(a) Caretakers' salaries (b) Caretakers' supplies (c) Utilities - Power - Fuel - Telephone - Water and Sewer (d) Repairs - repair crew salaries - repair materials (e) Insurance
5. Conveyance	Bus Operation
6. "Other Inputs"	(a) Boarding allowances (b) Bursaries (c) Tuition (d) Health services

Source: Compiled from the Auditor's Financial Statements of the County of Athabasca #12, 1959-1967.

TABLE XVI
THE WEIGHTS OF VARIOUS COMPONENTS USED IN COMPILING
THE ADMINISTRATION SUBINDEX

Components	Weights
Secretary-treasurer's salary	.0930
Office assistants' salaries	.2426
Councillors' fees	.2257
Printing	.0453
Office caretaker's salary	.0624
Telephone	.0274
Postage	.0183
Advertising	.0831
"Other Inputs"	.2022

Source: Compiled from the Auditor's Financial Statements of the County of Athabasca #12, 1959-1967.

Atherton (1, p. 69), regarding the utility-determining characteristics of years of training of teachers. Instruction Subindex I was based on the assumption that years of training is not a utility-determining characteristic of the quality of instruction. This subindex was calculated from the unweighted price relative of the average salary of teachers. Instruction Subindex II was based on the assumption that years of training is a utility-determining characteristic of the quality of instruction. Two levels of training were considered, two years or less and three years or more. This subindex was calculated from the weighted price relative of the average salary for teachers with two or less years of training and the weighted price relative of the average salary of teachers with three or more years of training. The weights for these price relatives were 0.6958 and 0.3042 respectively, based on the expenditures. Instruction Subindex III was based on the assumption that years of training is a utility-determining characteristic of the quality of instruction. Three levels of training were considered--one year of training, two years of training, and three or more years of training. This subindex was calculated from the weighted price relative of the average salary of teachers with one year of training, the weighted price relative of the average salary of teachers with two years of training, and the weighted price relative of the average salary of teachers with three or more years of training. The weights for these price relatives were 0.4882, 0.2076, and 0.3042 respectively, based on expenditures.

Instructional Aids and Supplies Subindex. The Instructional Aids and Supplies Subindex was compiled from the weighted price relatives of correspondence courses, books, and supplies and aids. These price relatives were weighted 0.0407, 0.2916, and 0.6677 respectively, based on expenditures. Since these price relatives were the same as those used by Atherton (1, p. 109) it was necessary to change the base of his price relatives and extend them through 1966 and 1967.

Plant Operation and Maintenance Subindex. The Plant Operation and Maintenance Subindex was compiled from the weighted price relatives for caretakers' salaries, caretakers' supplies, power, fuel, telephone, water and sewer, repair crew salaries, repair materials, and insurance. The weights of the various price relatives are illustrated in Table XVII.

Conveyance Subindex. The Conveyance Subindex was based on the unweighted price relatives of the cost per day of contracting bus services on a single bus route.

"Other Inputs" Subindex. The "Other Inputs" Subindex was compiled from the weighted price relatives of bursaries, tuition, boarding allowances, and health services. The weights of the various price relatives are illustrated in Table XVIII, page 47.

TABLE XVII
THE WEIGHTS OF VARIOUS COMPONENTS USED IN COMPILING THE PLANT
OPERATION AND MAINTENANCE SUBINDEX

Component	Weight
Caretakers' salaries	0.2860
Caretakers' supplies	0.0584
Power	0.0789
Fuel	0.1316
Telephone	0.0351
Water and Sewer	0.0281
Repair crew salaries	0.1315
Repair materials	0.2251
Insurance	0.0253

Source: Compiled from the Auditor's Financial Statements of the County of Athabasca #12, 1959-1967.

TABLE XVIII
THE WEIGHTS OF THE VARIOUS COMPONENTS OF THE
"OTHER INPUTS" SUBINDEX

Components	Weights
Bursaries	0.2590
Tuition	0.1292
Boarding Allowances	0.5258
Health Services	0.0860

Source: Compiled from Expenditure Records of the County of
Athabasca #12.

II. PRICE RELATIVES, SUBINDEX, AND INDEX CONSTRUCTION

By a method similar to that used by Atherton, the education price indexes were calculated in a series of steps (1, p. 67).

- Step I: The individual educational inputs were priced for each year over the period 1959-1967.
- Step II: The price of each input was compared to its price in 1959 to compile a price relatives series for that input.
- Step III: The educational input was assigned a weight reflecting its importance to the major category of inputs.
- Step IV: The weighted price relatives for the educational inputs were combined into a subindex for a category of inputs.
- Step V: The subindexes were assigned a weight according to expenditures in 1965.
- Step VI: The weighted subindexes were combined to produce an education price index.

III. COMPARISON OF PRICE RELATIVES, SUBINDEXES, AND INDEXES

As was noted earlier, one purpose of this study was to compare the effect of inflation of educational inputs of the County of Athabasca with the effect of inflation of educational inputs of the Province of Alberta. This necessitated comparisons of the results of this study to the results of Atherton's study.

The decision as to whether there are large differences was made by comparing year-to-year and overall changes in the subindexes, derived in this study, to the comparable subindexes of Atherton's study. If

large differences appeared an attempt was made to isolate the specific input or inputs that caused this difference. This was done by comparing the price relatives for educational inputs.

The previous paragraph makes mention of differences between education price indexes. It was expected that the price indexes derived in this study would differ from those derived by Atherton because of the lower level of aggregation of the price data. A major problem arose when an attempt was made to specify a method by which an index can be said to be significantly different or only different due to chance. Parametric statistical methods could not be used because the sample was too small and not likely normally distributed. Non-parametric statistical methods could not be used as the sample was too small and not independent. The choice of method then became somewhat arbitrary.

According to Fisher, if index numbers are calculated from unbiased formulae, they will seldom differ by five per cent (2, p. 446). Large fluctuations in price of inputs or stability of price over a period of years followed by a rapid change are in evidence in this study. These kinds of changes did not appear in Atherton's study because of the high level of aggregation. Thus it was similarities in trends in the indexes and subindexes that were examined in the comparisons rather than a detailed study of individual index numbers.

The judgement as to differences between two series of index numbers was based on an examination of three properties of each series. First, the mean percentage increases were compared. Second, the general trends in each series were compared. And third, the individual index numbers were compared.

REFERENCES FOR CHAPTER III

1. Atherton, P. J. "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965." Unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968.
2. Fisher, Irving. The Making of Index Numbers. Boston: Houghton Mifflin Company, 1922.

CHAPTER IV

COUNTY OF ATHABASCA EDUCATION PRICES

I. INTRODUCTION

This chapter provides a summary of the prices of educational inputs used in school operation in the County of Athabasca. The data obtained and the price relatives derived are presented. These price relatives were weighted according to the weights calculated in Chapter III and compiled into subindexes. The subindexes were weighted and compiled into price indexes. The stages in the construction of the indexes are shown.

II. CONSTRUCTION OF SUBINDEXES

Administration Subindex

The administration Subindex was compiled from weighted price relatives of secretary-treasurer's salary, office assistants' salaries, councillors' fees, printing, office caretaker's salary, telephone, postage, advertising and other inputs.

Secretary-treasurer's salary. The salary per month for the secretary-treasurer was obtained from the records of the County of Athabasca. A price relative series was calculated from this monthly salary. This monthly salary and price relative series is illustrated in Table XIX.

TABLE XIX
MONTHLY SALARY AND PRICE RELATIVES SERIES FOR THE SECRETARY-
TREASURER OF THE COUNTY OF ATHABASCA

Year	Monthly Wage in Dollars ¹	Price Relatives
1959	\$383.00	100.00
1960	416.66	108.69
1961	433.33	113.04
1962	500.00	130.44
1963	565.00	143.48
1964	580.00	151.31
1965	600.00	156.52
1966	600.00	156.52
1967	641.00	167.22

¹ Compiled from the payroll records of the County of Athabasca.

Office assistants' salaries. A sample of the monthly salaries of three office assistants was obtained from the records of the County of Athabasca for each of the years of the study. From these, an average monthly salary for office assistants was calculated. This average was used to calculate a price relative series for office assistants. The calculation of the price relatives for office assistants is illustrated in Table XX.

Councillors' fees. From an examination of the Auditor's Financial Statements of the County of Athabasca (2), it was determined that about one-half of the councillors' fees were paid for mileage and the other half for meetings and supervision. From records, it was determined that from 1959 until 1967 mileage rates remained constant at twelve cents per mile. It was also determined that the daily rate for supervision and meetings was fifteen dollars per day from 1959 through 1965. During 1966 and 1967 the daily rate for supervision and meetings changed to twenty dollars per day. This resulted in a price relative series for councillors' fees of 100.00 for 1959 through 1965 and 116.67 for each of the years 1966 and 1967.

Printing. From an examination of the records of the County of Athabasca, it was determined that a major portion of the printing of forms and envelopes was produced by the Echo Printing Limited. A telephone conversation with Miss Rogers, Manager of Echo Printing, resulted in a sample of prices of printing that her firm had produced for the County of Athabasca. She quoted prices for school bus operator's

TABLE XX

AVERAGE MONTHLY SALARY AND PRICE RELATIVE SERIES FOR OFFICE
ASSISTANTS OF THE COUNTY OF ATHABASCA

Year	Sample of Three Salaries (Dollars) ¹			Average Monthly Salary (Dollars)	Price Relatives
1959	\$154.59	181.84	389.91	\$242.20	100.00
1960	181.46	216.91	334.68	244.35	100.89
1961	206.16	258.02	363.27	275.82	113.88
1962	188.36	277.92	403.53	289.94	119.71
1963	195.72	291.77	378.98	288.82	119.25
1964	207.00	282.67	396.67	295.45	121.99
1965	180.36	287.97	403.57	290.63	120.00
1966	191.91	300.58	392.18	294.89	131.75
1967	199.61	330.97	429.02	319.87	132.07

¹ Compiled from the payroll records of the County of Athabasca.

report forms, large envelopes, and small envelopes. These she estimated accounted for twenty per cent, forty per cent, and forty per cent respectively of County of Athabasca purchases from her firm. From this sample of prices, a price relative series for printing was compiled. The prices sampled and the resulting price relatives are illustrated in Table XXI.

Office caretaker. The monthly salary of the office caretaker was obtained from the records of the County of Athabasca. For the years 1959 through 1963, the monthly salary was one hundred twenty-five dollars. In 1964 it was increased to one hundred thirty dollars. In 1965 through 1967 it was one hundred thirty-five dollars. This resulted in a price relative series of 100.00 for 1959 through 1963, 104.00 for 1964, and 108.00 for 1964 through 1967.

Telephone. From a conversation with Mr. Dale Swanson, Supervisor for Alberta Government Telephones in the Athabasca area, it was determined that the telephone rates had not changed in that area over the period of the study. This resulted in a price relative series for telephone of 100.00 for each of the years 1959 through 1967.

Postage. Since postage rates had not changed over the period 1959 through 1967, a constant price relatives series of 100.00 was used for postage.

Advertising. An examination of the records of the County of Athabasca showed that the major portion of money disbursed for advertising

TABLE XXI
PRINTING PRICES AND PRICE RELATIVES FOR THE
COUNTY OF ATHABASCA

	Price per One Thousand (in Dollars) of:			Price Relatives
	School Bus Operators' Report Forms	Large Envelopes	Small Envelopes	
Weight	.2	.4	.4	
Year				
1959	\$21.00	\$12.50	\$7.90	100.00
1960	21.00	15.00	7.90	108.00
1961	28.00	15.00	10.00	125.30
1962	28.00	15.00	10.00	125.30
1963	30.00	15.00	10.00	127.20
1964	30.00	16.00	11.00	135.47
1965	32.00	16.00	11.00	137.37
1966	32.00	17.00	12.00	145.64
1967	34.00	17.00	13.00	152.60

Source: Echo Printing Limited, Athabasca.

went to the Edmonton Journal for advertisements for teachers. Upon a request for price data for classified advertisements, Mr. W. H. Peter, Manager of Classified Advertising for the Edmonton Journal, supplied the line rate of advertising for each of the years of the study. This was used to compile a price relative series for advertising. The line rate for advertising and the resulting price relatives are illustrated in Table XXII.

"Other Inputs." An examination of records of the County of Athabasca revealed that this category did not represent the purchase of a homogeneous set of inputs but rather a collection of items that varied from year to year. Items that appear to be included are such things as replacement of office machines, replacement of office furniture, and gifts, to name only a few. In an attempt to reflect the price changes in these items, it was decided to use the Wholesale Price Index for "Fully and Chiefly" Manufactured Goods. The base of this index was changed to 1959. This was included as column ten of Table XXIII.

Administration Subindex construction. The price relatives for the various inputs were weighted and combined to form the Administration Subindex for the County of Athabasca. The price relatives, weights, and resulting subindex are illustrated in Table XXIII, page 59.

Instruction Subindex

The alternate assumption regarding the effect of years of training as a utility-determining characteristic in the quality of instruction made it necessary to compile three Instruction Subindexes.

TABLE XXII
ADVERTISING PRICE AND PRICE RELATIVES FOR THE
COUNTY OF ATHABASCA

Year	Line Rate, (Dollars) ¹	Price Relatives
1959	\$0.32	100.00
1960	0.35	109.38
1961	0.35	109.38
1962	0.39	121.88
1963	0.41	128.13
1964	0.43	134.38
1965	0.43	134.38
1966	0.43	134.38
1967	0.46	143.75

¹Obtained from Mr. W. H. Peter, Manager, Classified Advertising,
Edmonton Journal.

TABLE XXIII

ADMINISTRATION SUBINDEX FOR THE COUNTY OF ATHABASCA

Secretary- treasurer	Office Assis- tants	Council- lors' fees	Print- ing	Office Care- taker	Tele- phone	Postage	Adver- tising	"Other Inputs"	Administration Subindex
Weight Year	.0930 (1)	.2426 (2)	.2257 (3)	.0453 (4)	.0624 (5)	.0274 (6)	.0183 (7)	.0831 (8)	.2022 (9)
1959	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1960	108.69	100.89	100.00	108.00	100.00	100.00	100.00	109.38	102.19
1961	113.04	113.88	100.00	125.30	100.00	100.00	100.00	109.38	106.74
1962	130.44	119.71	100.00	125.30	100.00	100.00	100.00	121.88	111.40
1963	143.48	119.25	100.00	127.20	100.00	100.00	100.00	128.13	113.51
1964	151.31	121.09	100.00	135.47	104.00	100.00	100.00	134.38	116.12
1965	156.52	120.00	100.00	137.37	108.00	100.00	100.00	134.38	116.89
1966	156.52	121.75	116.67	145.64	108.00	100.00	100.00	134.38	122.25
1967	167.22	132.07	116.67	152.60	108.00	100.00	100.00	143.75	127.25

Sources: Column 1, Table XIX, page 52; Column 2, Table XX, page 54; Column 3, page 53; Column 4, Table XXI, page 56; Column 5, page 55; Column 6, page 55, Column 7, page 56; Column 8, Table XXII, page 58; and Column 9, National Industrial Conference Board, Current Business Trends in Canada (Montreal: N.I.C.B., 1968), p. 23.

Instruction Subindex I. In the construction of this subindex, years of training was not considered as a utility-determining characteristic in the quality of instruction. The total salary paid to full-time teachers was compiled from the School Foundation Fund Regulations Report of the County of Athabasca and the secretary-treasurer's List of Teachers (prior to 1961). From these same forms were obtained the number of full-time teachers on salary. These data were used to calculate the average salary. The average salary was used to calculate Instruction Subindex I illustrated in Table XXIV.

Instruction Subindex II. This subindex was based on the assumption that years of training is a utility-determining characteristic in the quality of instruction. Two levels of training were considered--two years or less and three years or more.

From the secretary-treasurer's List of Teachers (prior to 1961) and the School Foundation Fund Regulations Report of the County of Athabasca, the total salary paid to all full-time teachers with two years or less of training was obtained as well as the total salary paid to all full-time teachers with three or more years of training. The number of teachers in each of these categories each year was also obtained. From these data, the average salary and price relatives series for each category was calculated. The price relatives were weighted and combined to form Instruction Subindex II illustrated in Table XXV, page 62.

TABLE XXIV
COMPILATION OF INSTRUCTION SUBINDEX I

Year	Total Salary (Dollars)	Number of Teachers	Average Salary (Dollars)	Instruction Subindex I
1959	\$394,455	96	\$4,108.91	100.00
1960	417,732	97	4,306.52	104.81
1961	480,890	100	4,808.90	117.04
1962	505,885	104	4,864.28	118.38
1963	519,270	99	5,245.15	127.65
1964	509,045	97	5,247.89	127.72
1965	553,890	101	5,484.06	133.47
1966	584,640	102	5,731.76	139.50
1967	699,720	109	6,144.22	149.53

Source: Compiled from County of Athabasca, Secretary-treasurer's List of Teachers (prior to 1961) and School Foundation Fund Regulations Report.

TABLE XXV

COMPILATION OF INSTRUCTION SUBINDEX II

	Two Years or Less Training			Three Years of More Training					
	Total Salary (Dollars)	Number	Average Salary (Dollars)	Price Relatives	Total Salary (Dollars)	Number	Average Salary (Dollars)	Price Relatives	Instruction Subindex II
Weight Year				.6958					
1959	\$399,420	87	\$3,901.38	100.00	\$55,035	9	\$6,155.00	100.00	100.00
1960	349,444	86	4,063.30	104.15	68,288	11	6,208.00	101.52	103.35
1961	377,960	84	4,499.52	115.33	102,930	16	6,433.13	105.20	112.25
1962	346,340	80	4,329.25	110.97	159,545	24	6,647.71	108.71	110.28
1963	356,295	75	4,750.60	121.77	162,975	24	6,790.63	111.05	118.51
1964	324,345	70	4,633.50	118.77	184,700	27	6,840.74	111.87	116.67
1965	346,990	72	4,819.31	123.53	206,900	29	7,134.48	116.67	121.44
1966	378,575	74	5,115.88	131.13	206,065	28	7,359.46	120.35	127.85
1967	406,005	76	5,342.17	136.93	263,715	33	7,991.36	130.68	135.03

Compiled from the County of Athabasca, Secretary-treasurer's List of Teachers and School Foundation Fund Regulations Report.

Instruction Subindex III. This subindex was based on the assumption that years of training is a utility-determining characteristic in the quality of instruction. Three levels of training were considered--one year of training, two years of training, and three or more years of training.

The total paid to all full-time teachers in each of the categories as well as the number of teachers in each category was obtained from the secretary-treasurer's List of Teachers (prior to 1961) and the School Foundation Fund Regulations Report of the County of Athabasca. From these data, the average salary for teachers in each category was calculated. The average salary was used to compile a price relatives series for each category. These price relatives were weighted and combined to form the Instruction Subindex III. The compilation of Instruction Subindex III is illustrated in Table XXVI.

Instructional Aids and Supplies Subindex

The Instructional Aids and Supplies Subindex was compiled from the weighted price relatives series of books, correspondence courses, and supplies.

Books. It was decided that, since the School Book Branch of the Department of Education was the main supplier of books to schools, a sample of the prices charged by the School Book Branch would provide data representative of the price changes of books. This was the procedure used by Atherton (1, p. 104). It was necessary, then, only to obtain prices for the sample of books that Atherton used for the years 1966 and 1967. The sample of prices obtained was used to extend

TABLE XXVI

COMPILATION OF INSTRUCTION SUBINDEX III

Weight Year	Training - One Year			Training - Two Years			Training - Three Years or More		
	Total Salary (Dollars)	No.	Average Salary (Dollars)	Price Relatives	Total Salary (Dollars)	No.	Average Salary (Dollars)	Price Relatives	Price Relatives ¹
									Subindex III
				.4882				.2076	.3042
1959	\$256,805	69	\$3,721.81	100.00	\$82,615	18	\$4,589.72	100.00	100.00
1960	255,024	66	3,864.00	103.82	94,420	20	4,721.00	102.86	101.52
1961	254,325	61	4,169.26	112.02	123,635	23	5,375.43	117.12	105.20
1962	260,140	62	4,295.81	112.74	86,200	18	4,788.89	104.34	108.71
1963	251,495	56	4,490.98	120.67	104,800	19	5,515.79	120.18	111.05
1964	230,970	52	4,441.73	119.34	93,375	18	5,187.50	113.02	111.87
1965	235,295	51	4,613.63	123.96	111,695	21	5,318.81	115.89	116.67
1966	274,025	56	4,893.30	131.48	104,550	18	5,808.33	126.55	120.35
1967	245,105	48	5,106.35	137.20	160,900	28	5,746.43	125.50	130.68
									132.73

Compiled from the County of Athabasca, Secretary-treasurer's List of Teachers and School Foundation Fund Regulations Report.

¹From Column 9, Table XXV, page 62.

Atherton's series. The base was then changed to 1959 to form the price relatives series for books. The compilation of the price relatives series for books is illustrated in Table XXVII.

Correspondence courses. The expenditures of school authorities in Alberta have, in the past, provided correspondence courses to the students from the Correspondence School Branch of the Department of Education. Atherton, in sampling the prices of the Correspondence School Branch of the Department of Education, had found that the price of correspondence courses had changed in 1958 and 1961 (1, p. 108). Price data obtained from the Correspondence School Branch of the Department of Education showed that the price of correspondence courses had not changed in the period 1961 through 1967. Thus, it was possible to extend Atherton's series and change its base to form the price relatives series for correspondence courses. The compilation of the price relatives series for correspondence courses is illustrated in Table XXVIII, page 67.

Supplies. Atherton obtained his price data for supplies from Moyer Division, Vilas Industries (1, p. 107). The records of the County of Athabasca showed many purchases from this same firm. Thus, it was decided to obtain prices for the sample of products that Atherton used for his study for the years 1966 and 1967. From these data, it was possible to change the base of Atherton's price relatives series for supplies and extend the series through 1966 and 1967. The compilation of the price relatives series for supplies is illustrated in Table XXIX, page 68.

TABLE XXVII
COMPILATION OF THE PRICE RELATIVES FOR BOOKS

Year	Price Relatives for Books ¹ (Base 1957)	Price Relatives for Books ² (Base 1959)
1959	103.10	100.00
1960	107.32	104.07
1961	110.09	106.79
1962	114.08	110.67
1963	118.29	114.74
1964	119.82	116.20
1965	121.61	117.94
1966		120.37
1967		116.59

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 108.

²Price relatives for 1966 and 1967 were compiled from price data from the School Book Branch of the Department of Education.

TABLE XXVIII
 COMPILATION OF THE PRICE RELATIVES FOR CORRESPONDENCE COURSES

Year	Price Relatives for Correspondence Courses	
	Base 1957 ¹	Base 1959 ²
1959	126.00	100.00
1960	126.00	100.00
1961	126.00	100.00
1962	177.00	140.48
1963	177.00	140.48
1964	177.00	140.48
1965	177.00	140.48
1966		140.48
1967		140.48

¹ P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 108.

² Price relatives for 1966 and 1967 were compiled from price data from the Correspondence School Branch of the Department of Education.

TABLE XXIX
COMPILATION OF THE PRICE RELATIVES FOR SUPPLIES

Year	Price Relatives for Supplies	
	Base 1957 ¹	Base 1959 ²
1959	110.57	100.00
1960	111.63	100.90
1961	112.09	101.37
1962	112.75	102.02
1963	113.20	102.46
1964	118.41	106.78
1965	118.50	106.86
1966		108.69
1967		118.56

¹ P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 108.

² Price relatives for 1966 and 1967 were computed from price data obtained from Moyer Division, Vilas Industries.

Instructional Aids and Supplies Subindex construction. The various price relatives were weighted and compiled to form the Instructional Aids and Supplies Subindex. The compilation of the Instructional Aids and Supplies Subindex is illustrated in Table XXX.

Plant Operation and Maintenance Subindex

The Plant Operation and Maintenance Subindex was calculated from the weighted price relatives of caretakers' salaries, caretakers' supplies, power, fuel, telephone, water and sewer, repair crew salaries, repair materials, and insurance.

Caretakers' salaries. From the records of the County of Athabasca, a sample of five of the monthly salaries for caretakers was obtained for each year of the study. From this sample, an average monthly salary of caretakers was calculated. The average monthly salary was used to calculate the price relatives series for caretakers' salaries. This calculation is illustrated in Table XXXI, page 71.

Caretakers' supplies. One of the major suppliers of caretakers' supplies in Alberta is Mid-West Supplies Limited, of Edmonton. In a telephone conversation with Mr. McCambly, Manager, Mid-West Supplies, it was ascertained that soaps and cleaning preparations make up a large part of his firm's sales to schools. Mr. McCambly also stated that national prices of soaps and cleaning preparations would reflect the prices charged by his company. Thus it was decided to use the Dominion Bureau of Statistics Price Index for "Soaps, Washing Compounds, and Cleaning Preparations" to compile the price relatives for caretakers'

TABLE XXX
 COMPILATION OF THE INSTRUCTIONAL AIDS AND SUPPLIES SUBINDEX

	Books	Corres- pondence Courses	Supplies	Instructional Aids and Supplies Subindex
Weight	.2916	.0407	.6677	
Year	(1)	(2)	(3)	
1959	100.00	100.00	100.00	100.00
1960	104.07	100.00	100.90	101.79
1961	106.79	100.00	101.37	102.89
1962	110.67	140.48	102.02	106.11
1963	114.74	140.48	102.46	107.59
1964	116.20	140.48	106.78	110.90
1965	117.94	140.48	106.86	111.46
1966	120.37	140.48	108.69	113.39
1967	116.59	140.48	118.56	118.88

Sources: Column 1, Table XXVII, page 66; Column 2, Table XXVIII, page 67; and Column 3, Table XXIX, page 68.

TABLE XXXI

COMPILATION OF THE PRICE RELATIVES FOR CARETAKERS' SALARIES

Year	Sample of Caretakers' Monthly Salaries (Dollars) ¹			Average Monthly Salary (Dollars)	Caretakers' Salaries Price Relatives	
1959	\$163.08	\$181.67	\$207.74	\$313.76	\$214.80	100.00
1960	163.80	207.36	236.88	269.78	313.08	110.88
1961	163.80	225.98	227.88	245.97	333.82	111.49
1962	162.60	231.98	244.62	245.97	331.20	113.25
1963	186.96	243.22	249.06	302.68	329.80	122.13
1964	186.20	243.22	304.80	312.40	319.27	127.18
1965	179.89	327.33	335.73	327.22	328.85	140.57
1966	301.22	317.87	320.99	337.11	421.98	158.21
1967	331.99	336.72	338.46	364.92	404.18	165.39

¹From the Payroll Records of the County of Athabasca.

supplies. Since the Industrial Selling Price Index had a base year of 1956 it was necessary to change the base year to 1959 to compute the price relatives series for Caretakers' supplies, as illustrated in Table XXXII.

Power. The commercial rates, for electrical energy consumed, that applied to the Athabasca area were obtained from the Board of Public Utilities of the Province of Alberta. For the period of 1959 through 1963, the rates were as follows:

\$.08 per kilowatt hour for the first 50 kilowatt hours.

\$.06 per kilowatt hour for the next 50 kilowatt hours.

\$.03 per kilowatt hour for the next 200 kilowatt hours.

\$.02 per kilowatt hour for the remaining kilowatt hours.

For the year 1964, the rates were as follows:

\$.055 per kilowatt hour for the first 40 kilowatt hours.

\$.027 per kilowatt hour for the next 160 kilowatt hours.

\$.019 per kilowatt hour for the next 200 kilowatt hours.

\$.105 per kilowatt hour for the remaining kilowatt hours.

In order to compare the power rates over the years, a representative amount of power consumed was necessary. In a telephone conversation with Mr. R. Wilkinson, Secretary-treasurer of the County of Athabasca, it was determined that a figure of three thousand kilowatt hours would provide a representative price for power. The price paid for three thousand kilowatt hours was used to provide a price relative series for power. The compilation of the price relatives for power is illustrated in Table XXXIII, page 74.

TABLE XXXII

COMPILATION OF THE PRICE RELATIVES FOR CARETAKERS' SUPPLIES

Year	Industrial Selling Prices "Soaps, Washing Compounds, and Cleaning Preparations" ¹ (Base 1956)	Price Relatives For Caretakers' Supplies
1959	111.4	100.00
1960	113.4	101.80
1961	113.7	102.06
1962	113.6	101.97
1963	113.9	102.24
1964	114.9	103.14
1965	117.9	105.83
1966	113.1	101.53
1967	115.1	103.59

¹ Dominion Bureau of Statistics, Industrial Selling Prices Indexes, "Soaps, Washing Compounds, and Cleaning Preparations," 1959-1967.

TABLE XXXIII
COMPILATION OF THE PRICE RELATIVES FOR POWER

Year	Cost for 3,000 kwh (Dollars)	Price Relatives for Power
1959-1963	\$65.00	100.00
1964	49.32	75.88
1965-1967	40.75	62.69

Source: Compiled from the records of the Board of Public Utilities Commissioners, Province of Alberta.

Fuel. Much of the fuel used in heating schools is either propane or natural gas. Since exact figures on the consumption of these fuels were not readily available, it was decided to compile a price relative for fuel that is an unweighted average of the price relatives for propane and natural gas. The price relatives for propane were calculated from the propane prices supplied by Mr. Harold L. Osland, Manager, Mutual Propane Limited. The price relatives for natural gas were calculated from natural gas rates supplied by Mr. J. R. Graham, Assistant Secretary-treasurer, Plains Western Gas and Electric Company Limited. The accounting department of Plains Western Gas and Electric Company estimated that a good price relative series for natural gas would be 100.00 in the period 1959 through 1965 and 94.13 in the period 1966 and 1967. The compilation of the price relatives for fuel is illustrated in Table XXXIV.

Telephone. The telephone price relatives used in this subindex were the same as those used in the Administration Subindex.

Water and sewer. According to the Secretary-treasurer of the town of Athabasca, water and sewer rates remained constant through the period 1959 until late in 1967. Thus, a constant price relative of 100.00 was used to reflect water and sewer rates.

Repair salaries. In order to ascertain changes in the salary paid to repairmen, a sample of three of the monthly salaries of repairmen were obtained from the records of the County of Athabasca. From this sample, an average monthly salary for repairmen was calculated. The

TABLE XXXIV
 COMPILATION OF THE PRICE RELATIVES FOR FUEL

Year	Propane Prices (Cents per Gal.) ¹	Propane Price Relatives	Natural Gas Price Relatives ²	Fuel Price Relatives
1959	12.0	100.00	100.00	100.00
1960	12.0	100.00	100.00	100.00
1961	12.0	100.00	100.00	100.00
1962	11.7	97.50	100.00	98.75
1963	11.8	98.33	100.00	99.17
1964	11.0	91.67	100.00	95.83
1965	9.8	81.67	100.00	90.83
1966	10.2	85.00	94.13	89.57
1967	10.5	87.50	94.13	90.82

¹ Prices obtained from Mutual Propane Limited, Edmonton.

² Price relatives obtained from Plains Western Gas and Electric Company, Limited, Edmonton.

price relative series for repair salaries was compiled from the average monthly salaries of repairmen. The compilation of the price relatives for repair salaries is illustrated in Table XXXV.

Repair materials. In order to reflect the price changes of repair materials, it was decided to use the Wholesale Price Index for Non-residential Building Materials. To obtain the price relatives for repair materials, it was necessary to shift the base to 1959. The compilation of the price relatives for repair materials is illustrated in Table XXXVI, page 79.

Insurance. According to Mr. R. DeRosenrall of Reed, Shaw, and McNaught, Insurance Brokers, the actual rate of insurance of school buildings has decreased but the replacement value of school buildings has increased over the period of the study. Since insurance is purchased to replace school buildings in case of damage, the net effect has been that of a constant price of insurance coverage. Thus, it was decided to use a constant 100.00 price relative for insurance coverage.

Plant Operation and Maintenance Subindex construction. The various price relatives were weighted and compiled to form the Plant Operation and Maintenance Subindex. The compilation of the Plant Operation and Maintenance Subindex is illustrated in Table XXXVII, page 80.

TABLE XXXV
 COMPILATION OF THE PRICE RELATIVES FOR REPAIR SALARIES

Year	Sample of Three Monthly Salaries of Repairmen (Dollars) ¹			Average Monthly Salary (Dollars)	Price Relatives
1959	\$243.32	\$255.91	\$283.08	\$247.44	100.00
1960	207.16	213.12	333.17	251.15	101.50
1961	206.52	235.87	342.39	261.59	105.72
1962	233.02	266.56	304.71	268.10	108.35
1963	248.04	268.81	318.77	278.54	112.57
1964	232.83	252.73	364.72	283.43	114.54
1965	247.40	295.92	364.72	302.68	122.32
1966	295.77	312.32	355.47	321.19	129.81
1967	263.13	313.58	415.86	330.86	133.71

¹Obtained from the payroll records of the County of Athabasca.

TABLE XXXVI
 COMPILATION OF THE PRICE RELATIVES FOR REPAIR MATERIALS

Year	Wholesale Price Index ¹ for "Non-residential Building Materials	Price Relatives for Repair Materials
1959	131.7	100.00
1960	132.3	100.46
1961	131.1	99.55
1962	131.9	100.15
1963	135.1	102.58
1964	139.6	106.00
1965	146.8	111.47
1966	151.0	114.66
1967	154.2	117.08

¹ National Industrial Conference Board, Current Business Trends in Canada (Montreal: National Industrial Conference Board 1968), p. 23.

TABLE XXXVII

COMPILATION OF THE PLANT OPERATION AND MAINTENANCE SUBINDEX

Caretakers'		Power		Fuel	Telephone	Water & Sewer		Salaries	Repair Materials	Insurance	Plant Operation & Maintenance Sub-index
Salaries	Supplies										
Weight	.2860	.0584	.0789	.1316	.0351	.0281	.1315	.2251	.0253		
Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)		
1959	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1960	110.88	101.80	100.00	100.00	100.00	100.00	101.50	100.46	100.00	100.00	103.52
1961	111.49	102.06	100.00	100.00	100.00	100.00	105.72	99.55	100.00	100.00	104.05
1962	113.25	101.97	100.00	98.75	100.00	100.00	108.35	100.15	100.00	100.00	104.87
1963	122.13	102.24	75.88	99.17	100.00	100.00	112.57	102.58	100.00	100.00	106.68
1964	127.18	103.14	62.69	95.83	100.00	100.00	114.54	106.00	100.00	100.00	107.73
1965	140.57	105.53	62.69	90.83	100.00	100.00	122.32	111.47	100.00	100.00	113.29
1966	158.21	101.53	62.69	89.57	100.00	100.00	129.81	114.66	100.00	100.00	119.64
1967	165.39	103.59	62.69	90.82	100.00	100.00	133.71	117.08	100.00	100.00	123.04

Sources: Column (1), Table XXXI, page 71; Column (2), Table XXXII, page 73; Column (3), Table XXXIII, page 74; Column (4), Table XXXIV, page 76; Column (5), page 76; Column (6), page 77; Column (7), Table XXXV, page 78; Column (8), Table XXXVI, page 79, and Column (9), page 80.

Conveyance Subindex

From discussions with various officials of the County of Athabasca, it was determined that a major proportion of the conveyance of students was accomplished through the use of contracts with private school bus operators. A lesser proportion of the conveyance was accomplished through the use of county-owned vehicles. According to Mr. R. Wilkinson, Secretary-treasurer, County of Athabasca, the changes in the rates paid to contract buses tend to reflect the changes in the cost of operation of county-owned buses.

To determine the price changes of contract buses, the daily rate paid to a contract bus was obtained from the records of the County of Athabasca. The particular route chosen had not changed in any way over the entire period of the study. The Conveyance Subindex was calculated from the daily rate for the contract bus on the one particular route. The compilation of the Conveyance Subindex is illustrated in Table XXXVIII.

"Other Inputs" Subindex

The "Other Inputs" category of this study represents the combined Auxiliary and Other categories of the Auditor's Financial Reports of the County of Athabasca. According to Mr. R. Wilkinson, Secretary-treasurer, County of Athabasca, the "Other Inputs" category is composed of expenditures on bursaries, tuition, boarding allowances, and health services.

Bursaries. According to the records of the County of Athabasca, the rate paid for bursaries has not changed over the period of this study.

TABLE XXXVIII
 COMPILATION OF THE CONVEYANCE SUBINDEX

Year	Daily Rate of A Contract Bus (Dollars) ¹	Conveyance Subindex
1959	\$20.61	100.00
1960	22.88	111.01
1961	22.88	111.01
1962	22.88	111.01
1963	22.88	111.01
1964	22.88	111.01
1965	23.04	114.90
1966	23.68	116.89
1967	24.61	119.41

¹Obtained from the records of the County of Athabasca.

Thus, to represent bursary prices, a constant price relatives series of 100.00 was used.

Tuition. To represent the rate of tuition paid by the County of Athabasca to other school authorities, it was decided to use the average cost per pupil in the schools of Alberta. This information was obtained from the Annual Reports of the Department of Education, Province of Alberta. The average cost per pupil was used to calculate the price relatives for tuition. The compilation of the tuition price relatives is illustrated in Table XXXIX.

Boarding allowances. To reflect the changes in the price of boarding allowances paid in lieu of transportation, it was decided to use the Consumer Price Index of the Dominion Bureau of Statistics. To calculate the price relatives for boarding allowances from this index, it was necessary to shift the base from 1949 to 1959. The compilation of the price relatives for boarding allowances is illustrated in Table XL, page 85.

Health services. To determine the prices of health services, it was decided to use the average monthly salary of nurses in Alberta. Since this was used by Atherton, it was necessary only to shift the base of his series and extend it through the years 1966 and 1967. The compilation of the price relatives for health services is illustrated in Table XLI, page 86.

"Other Inputs" Subindex construction. The various price relatives were weighted and combined to form the "Other Inputs" Subindex.

TABLE XXXIX
 COMPILATION OF THE PRICE RELATIVES FOR TUITION

Year	Average Cost Per Pupil (Dollars)	Tuition Price Relatives
1959	\$320.06	100.00
1960	342.51	107.01
1961	365.87	114.31
1962	390.80	122.10
1963	401.44	125.43
1964	417.07	130.31
1965	440.26	137.56
1966	475.20	148.47
1967	530.37	165.71

¹Annual Report, Department of Education, Province of Alberta,
 1959-1967.

TABLE XL
COMPILATION OF THE PRICE RELATIVES FOR BOARDING ALLOWANCES

Year	Consumer Price Index ¹	Boarding Allowances Price Relatives
1959	126.5	100.00
1960	128.0	101.19
1961	129.2	102.13
1962	130.7	103.32
1963	133.0	105.14
1964	135.4	107.04
1965	138.7	109.64
1966	143.9	113.75
1967	149.0	117.76

¹Dominion Bureau of Statistics, Canadian Statistical Review, 1959-1967.

TABLE XLI
COMPILATION OF THE PRICE RELATIVES FOR HEALTH SERVICES

Year	Health Services Price Relatives ¹	Health Services Price Relatives ²
1959	109.72	100.00
1960	117.00	106.64
1961	121.86	111.06
1962	120.24	109.59
1963	127.94	116.61
1964	128.34	116.97
1965	138.05	125.82
1966		128.04
1967		150.55

¹ P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 127.

² Price relatives for 1966 and 1967 calculated from data obtained from Alberta Bureau of Statistics, Annual Wage and Salary Survey, 1966-1967.

The compilation of the "Other Inputs" Subindex is illustrated in Table XLII.

III. CONSTRUCTION OF INDEXES

The three different Instruction Subindexes were based on alternate assumptions regarding the relationship between training and the quality of instruction, and, as such, represent three different estimates of the effect of inflation on the price of instruction. Thus, it was necessary to compile three separate Education Price Indexes for the County of Athabasca.

Education Price Index I

The County of Athabasca Education Price Index I was compiled from the Administration Subindex, Instruction Subindex I, Instructional Aids and Supplies Subindex, Plant Operation and Maintenance Subindex, Conveyance Subindex, and "Other Inputs" Subindex. The price of educational inputs, according to this index, increased from 100.00 in 1959 to 136.24 in 1967. The greatest increase in the price of educational inputs was in 1961 when the educational price increased 6.40 per cent over 1960. The average increase, according to this index, was 3.98 per cent. The compilation of the County of Athabasca Education Price Index I is illustrated in Table XLIII, page 89.

Education Price Index II

The County of Athabasca Education Price Index II was compiled from the Administration Subindex, Instruction Subindex II, Instructional

TABLE XLII
 COMPILATION OF THE "OTHER INPUTS" SUBINDEX

	Bursaries	Tuition	Boarding Allowance	Health Services	"Other Inputs" Subindex
Weight Year	.2590 (1)	.1292 (2)	.5258 (3)	.0860 (4)	
1959	100.00	100.00	100.00	100.00	100.00
1960	100.00	107.01	101.19	106.64	102.10
1961	100.00	114.31	102.13	111.06	103.92
1962	100.00	122.10	103.32	109.59	105.43
1963	100.00	125.43	105.14	116.61	107.42
1964	100.00	130.31	107.04	116.97	109.08
1965	100.00	137.56	109.64	125.82	112.14
1966	100.00	148.47	113.75	128.04	115.90
1967	100.00	165.71	117.76	150.55	122.17

Sources: Column 1, page 87; Column 2, Table XXXIX, page 84; Column 3, Table XL, page 85; and Column 4, Table XLI, page 86.

TABLE XLIII

COMPILATION OF THE COUNTY OF ATHABASCA EDUCATION PRICE INDEX I

Weight Year	Administration Subindex	Instruction Subindex I	Instructional Aids & Supplies Subindex	Plant Operation & Maintenance Subindex	Conveyance Subindex	"Other Inputs" Subindex	Education Price Index I
	.0285 (1)	.5351 (2)	.0348 (3)	.1368 (4)	.2596 (5)	.0052 (6)	
1959	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1960	102.19	104.81	101.79	103.52	111.01	102.10	106.05
1961	106.74	117.04	102.89	104.05	111.01	103.92	112.84
1962	111.40	118.38	106.11	104.87	111.01	105.43	113.93
1963	113.51	127.65	107.59	106.68	111.01	107.42	119.26
1964	116.12	127.65	110.90	107.73	111.01	109.08	119.63
1965	116.89	133.47	111.46	113.29	114.90	112.14	124.54
1966	122.25	139.50	113.39	119.64	116.89	115.90	129.39
1967	127.25	149.53	118.88	123.04	119.41	122.17	136.24

Sources: Column (1), Table XXIII, page 59; Column (2), Table XXIV, page 61; Column (3), Table XXX, page 70, Column (4), Table XXXVII, page 80; Column (5), Table XXXVIII, page 82; and Column (6), Table XLII, page 88.

Aids and Supplies Index, Plant Operation and Maintenance Subindex, Conveyance Subindex, and "Other Inputs" Subindex. The price of educational inputs, according to this index, increased from 100.00 in 1959 to 128.48 in 1967. The greatest increase in the price of educational inputs, according to this index, came in 1960 when the price increased by 5.27 per cent. The average increase was 3.20 per cent. The compilation of the County of Athabasca Education Price Index II is summarized in Table XLIV .

Education Price Index III

The County of Athabasca Education Price Index III was compiled from the Administration Subindex, Instruction Subindex III, Instructional Aids and Supplies Subindex, Plant Operation and Maintenance Subindex, Conveyance Subindex, and "Other Inputs" Subindex. The price of educational inputs, according to this index, increased from 100.00 in 1959 to 127.25 in 1967. The greatest increase in the price of educational inputs, according to this index, came in 1960 when the price increased by 5.04 per cent. The average increase was 3.08 per cent. The compilation of the County of Athabasca Education Price Index III is summarized in Table XLV, page 92.

IV. SUMMARY

The price of educational inputs in the County of Athabasca has increased by 3.98 per cent, 3.20 per cent, or 3.08 per cent, on the average, over the period 1959 through 1967. Of all of the categories of

TABLE XLIV
COMPILATION OF THE COUNTY OF ATHABASCA EDUCATION PRICE INDEX II

Weight Year	Administration Subindex	Instruction Subindex II	Instructional Aids & Supplies Subindex	Plant Operation & Maintenance Subindex	Conveyance Subindex	"Other Inputs" Subindex	Education Price Index II
	.0285 (1)	.5351 (2)	.0348 (3)	.1368 (4)	.2596 (5)	.0052 (6)	
1959	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1960	102.19	103.35	101.79	103.52	111.01	102.10	105.27
1961	106.72	112.25	102.89	104.05	111.01	103.92	110.28
1962	111.40	110.28	106.11	104.87	111.01	105.43	109.59
1963	113.51	118.51	107.59	106.68	111.01	107.42	114.36
1964	116.12	116.67	110.90	107.73	111.01	109.08	113.72
1965	116.89	121.44	111.46	113.29	114.90	112.14	118.10
1966	122.25	127.85	113.39	119.64	116.89	115.90	123.16
1967	127.25	135.03	118.88	123.04	119.41	122.17	128.48

Sources: Column (1), Table XXIII, page 59; Column (2), Table XXV, page 62; Column (3), Table XXX, page 70; Column (4), Table XXXVII, page 80; Column (5), Table XXXVIII, page 82; and Column (6), Table XLII, page 88.

TABLE XLV

COMPILATION OF THE COUNTY OF ATHABASCA EDUCATION PRICE INDEX III

Weight Year	Administration Subindex	Instruction Subindex III	Instructional Aids & Supplies Subindex	Plant Operation & Maintenance Subindex	Conveyance Subindex	"Other Inputs" Subindex	Education Price Index III
	.0285 (1)	.5351 (2)	.0348 (3)	.1386 (4)	.2596 (5)	.0052 (6)	
1959	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1960	102.19	102.92	101.79	103.52	111.01	102.10	105.04
1961	106.74	111.00	102.89	104.05	111.01	103.92	109.61
1962	111.40	109.77	106.11	104.87	111.01	105.43	109.32
1963	113.51	117.64	107.59	106.68	111.01	107.42	113.90
1964	116.12	115.76	110.90	107.73	111.01	109.08	113.23
1965	116.89	120.07	111.46	113.29	114.90	112.14	117.37
1966	122.25	127.07	113.39	119.64	116.89	115.90	122.74
1967	127.25	132.73	118.88	123.04	119.41	122.17	127.25

Sources: Column (1), Table XXIII, page 59; Column (2), Table XXVI, page 64; Column (3), Table XXX, page 70; Column (4), Table XXXVII, page 80; Column (5), Table XXXVIII, page 82; and Column (6), Table XLII, page 88.

educational inputs, instructional salaries have shown the greatest increase and instructional aids and supplies have shown the least increase.

REFERENCES FOR CHAPTER IV

1. Atherton, P. J. "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965." Unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968.
2. County of Athabasca #12. Auditor's Financial Statement. Edmonton, Alberta: Municipal Supplies, Limited, 1959-1967.

CHAPTER V

THE APPLICABILITY OF THE ALBERTA EDUCATION PRICE

INDEX TO THE COUNTY OF ATHABASCA

I. INTRODUCTION

It was expected that the Education Price Indexes for the County of Athabasca would be somewhat different from the Education Price Indexes for the Province of Alberta. Large differences in the indexes would imply that the nature and the price of educational inputs for the County of Athabasca were sufficiently different from the educational inputs for Alberta so that the Education Price Indexes for Alberta could not be applied to the County of Athabasca. On the other hand, slight differences between the two sets of indexes could be attributed to sampling differences and would suggest that the Education Price Indexes for Alberta could be applied to the County of Athabasca. The purpose of this section is to examine the indexes and subindexes of this study and compare them to the indexes and subindexes of Atherton's study.

II. COMPARISON OF SUBINDEXES

Administration

The Administration Subindex of Atherton's study and the Administration Subindex for the County of Athabasca tended to be quite similar in overall trend but some large differences appeared when the year-to-year

changes of the two series were compared. As illustrated in Table XLVI the mean percentage increase per year for the two subindexes were relatively similar--2.33 per cent for Alberta and 2.64 per cent for the County of Athabasca. If the Administration Subindex for Alberta had been applied to administration in the County of Athabasca, large errors would have been created in the years 1962 and 1964.

From 1961 to 1962, the price of administration for Alberta decreased by 0.02 per cent while the price of administration for the County of Athabasca increased by 4.37 per cent. It is possible that salary increases occurred in the County of Athabasca that did not occur in the province as a whole. The County of Athabasca secretary-treasurer's salary and office assistants' salaries both increased substantially in this period. Another factor that contributed to the difference was the price of advertising. This category made up about eight per cent of the Administration Subindex for the County of Athabasca and was subject to a large increase in this period.

From 1963 to 1964, the price of administration for the Province of Alberta decreased by 1.00 per cent while the price of administration for the County of Athabasca increased by 2.30 per cent. It is possible that substantial increases in the secretary-treasurer's salary, printing, and advertising in the County of Athabasca account for the difference between the subindexes for this period.

The differences between the Administration Subindex for the County of Athabasca and the Administration Subindex for Alberta account for a very small proportion of the differences between the resulting

TABLE XLVI

A COMPARISON OF THE ADMINISTRATION SUBINDEXES FOR THE PROVINCE
OF ALBERTA AND THE COUNTY OF ATHABASCA

Year	Administration Subindexes		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	104.17	102.19	4.17%	2.19%
1961	107.83	106.74	3.51	4.45
1962	107.80	111.40	-0.02	4.37
1963	110.59	113.51	2.59	1.89
1964	109.48	116.12	-1.00	2.30
1965	114.68	116.89	4.75	0.66
Mean percentage increase			2.33	2.64

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968), p. 99. (Base shifted to 1959.)

²Table XXIII, page 59.

Education Price Indexes. Since the Administration Subindex was weighted 0.0285 in compiling the County of Athabasca Education Price Index, a difference of about thirty-five points in the Administration Subindexes would account for a difference of one point in the resulting Education Price Indexes.

Instruction

The three separate Instruction Subindexes for Alberta and for the County of Athabasca necessitated three separate comparisons. Each subindex reflected different trends.

Instruction Subindex I. Of the three Instruction Subindexes, Instruction Subindex I for the County of Athabasca and Salary Subindex I for Alberta tended to be the most similar. As illustrated in Table XLVII, the mean percentage increase for the two series were relatively similar--4.74 per cent for Alberta and 5.00 per cent for the County of Athabasca. In terms of subindex numbers for the individual years, rather large differences occurred in 1960 and 1963, but these differences tended to disappear in the intervening years.

As illustrated in Figure I, the Instruction Subindex for the County of Athabasca tended to fluctuate more widely than Salary Subindex I for the Province of Alberta. It is possible that these fluctuations may be characteristic of the price changes in instruction in individual school authorities. This could be due, in part, to the separate settlements of salary contracts. Fluctuations of this sort would tend to cancel out when averaged across the whole of Alberta. Nevertheless,

TABLE XLVII

A COMPARISON OF INSTRUCTION SUBINDEX I FOR THE COUNTY OF ATHABASCA
TO SALARY SUBINDEX I FOR THE PROVINCE OF ALBERTA

Year	Instruction Subindex I		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	107.89	104.81	7.89%	4.81%
1961	115.96	117.04	7.48	11.67
1962	120.72	118.38	4.10	1.14
1963	123.72	127.65	2.29	7.83
1964	128.53	127.72	3.88	0.05
1965	132.13	133.47	2.80	4.50
Mean percentage increase			4.74	5.00

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 137. (Base shifted to 1959.)

²Table XXVI, page 64.

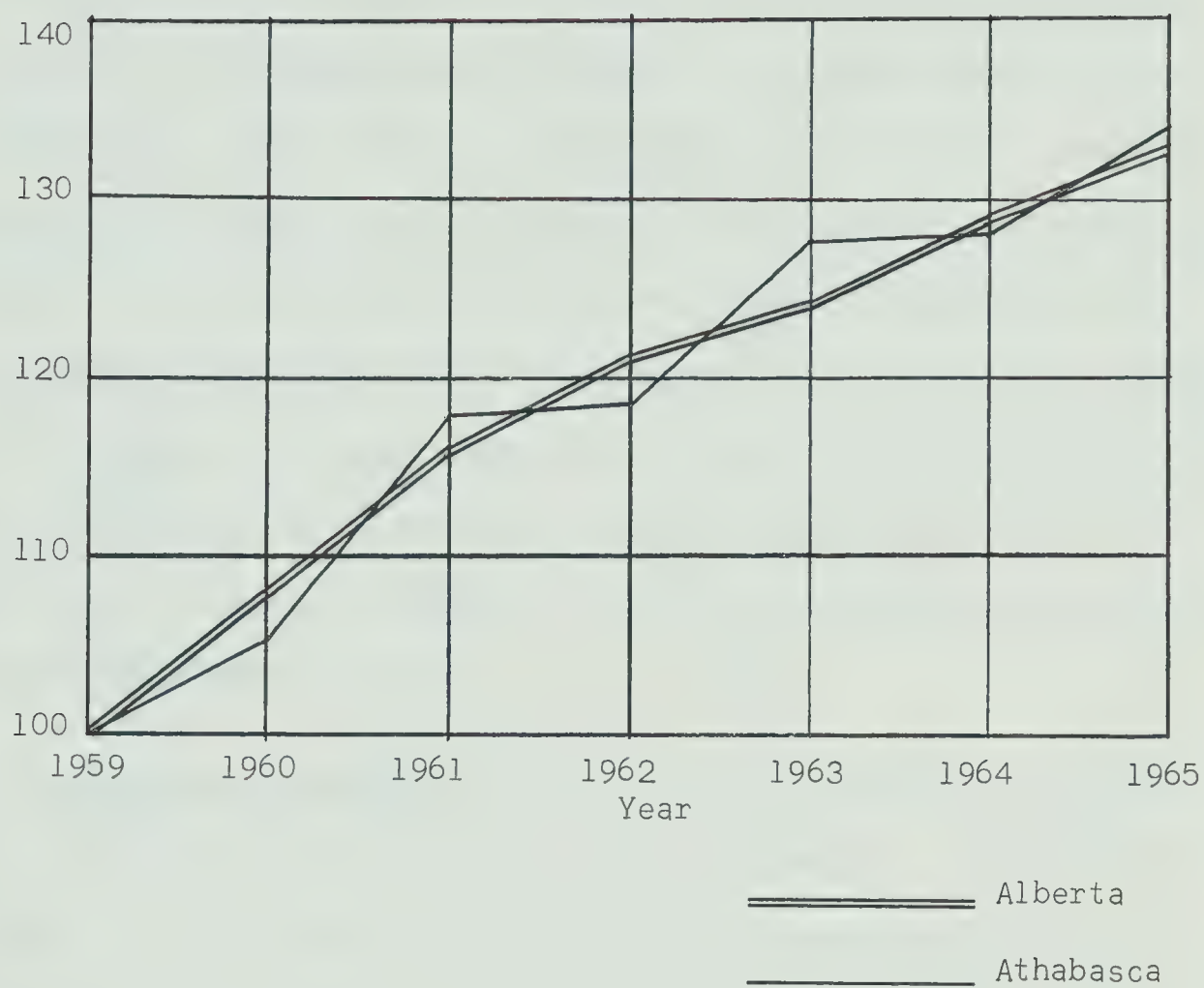


FIGURE I

A COMPARISON OF INSTRUCTION SUBINDEX I FOR THE COUNTY OF
ATHABASCA TO SALARY SUBINDEX I FOR THE
PROVINCE OF ALBERTA

Source: Table XLVII, page 99.

the differences in the price of instruction accounted for considerable differences in the resulting Education Price Indexes.

Since the Instruction Subindex was weighted 0.5351, a difference of 1.9 points in the measure of the price of instruction would account for a difference of 1.0 points in the measure of the price of education. The greatest difference between Instruction Subindex I for the County of Athabasca and Salary Subindex I for Alberta was 3.93 points in 1963. This difference would account for a difference of over two points in the resulting indexes. In other words, the Education Price Index I for the County of Athabasca was to be expected to be two points higher than Education Price Index I for Alberta due to the differences between the Instruction Subindexes alone.

Instruction Subindex II. The Instruction Subindex II for the County of Athabasca differs a great deal from the Salary Subindex II for Alberta. As illustrated in Table XLVIII, Instruction Subindex II for the County of Athabasca tends to be lower than the Salary Subindex II for Alberta in all years after the base year. Also, the Instruction Subindex II decreases in 1962 and 1964.

The constant difference between the two subindexes can be accounted for by consideration of the base year. It is possible that the average salary paid to teachers in the County of Athabasca in 1959 was higher than that of the province as a whole. This could be accounted for by a combination of experience increments and a large number of teachers with considerable experience.

TABLE XLVIII

A COMPARISON OF INSTRUCTION SUBINDEX II FOR THE COUNTY OF ATHABASCA
TO SALARY SUBINDEX II FOR THE PROVINCE OF ALBERTA

Year	Instruction Subindex II		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	106.90	103.35	6.90%	3.35%
1961	114.14	112.25	6.77	8.61
1962	117.49	110.28	2.94	-1.76
1963	119.70	118.51	1.88	7.46
1964	122.53	116.67	2.37	-1.55
1965	124.25	121.44	1.40	4.09
Mean percentage increase			3.71	3.37

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968), p. 137. (Base shifted to 1959.)

²Table XXV, page 62.

The Teachers' Salary Schedule for the County of Athabasca for 1958-59 lists the salary of teachers with one year of training to be \$2,500 to \$3,900 and two years of training to be \$2,900 to \$4,200. For the 1959-60 term, the salary for one year of training was \$2,700 to \$4,200. The average salary for teachers with two years of training or less in 1959, from Table XXV, page 62, was \$4,901.38. This suggests that teachers in this category had considerable experience and/or received a great deal of benefit from various bonus clauses in the contract. The fact that the average salary for teachers with one and two years of training increased to \$4,063.30, an increase of less than one hundred dollars, in 1960 while the salary schedule increased by at least two hundred dollars at all levels, suggests that these same conditions did not obtain during 1960. It is very possible that this very high average salary in 1959 affected the base of the series such as to make each of the following years appear inordinately low.

The decreases in the Instruction Subindex for the County of Athabasca in 1962 and 1964 may be attributed to decreases in the average salary of teachers with two years or less of training. It is possible that this can be accounted for by an influx, in each of these years, of teachers with two years or less of training and little experience.

Instruction Subindex III. The differences between Instruction Subindex III for the County of Athabasca and Salary Subindex III for Alberta appear strikingly similar to the differences between Instruction Subindex II for the County of Athabasca and Salary Subindex II for

Alberta. As illustrated in Table XLIX, the Instruction Subindex III for the County of Athabasca tends to be lower in all years, except the base year, than the Salary Subindex II for Alberta. This trend, as in Instruction Subindex II, can be accounted for by a consideration of the base years of the two studies.

The County of Athabasca Instruction Subindex III had some decreases, in 1962 and 1964, that were not in evidence in the Alberta Salary Subindex III. It is possible that the decrease in average salary of teachers with two years of training accounts for the decrease in 1962. On the other hand, the decrease in 1964 appears to be associated with decreases in the average salaries of teachers with one year of training as well as decreases in the average salaries of teachers with two years of training. It is possible that the decreases in average salaries, cited above, resulted from employment of teachers, in those years affected, that had less experience than the teachers employed in the previous years.

Digression into methodology. It was thought that changes in the proportion of teachers with various levels of training in the County of Athabasca might account for some of the differences between Instruction Subindex II for the County of Athabasca and Salary Subindex II for Alberta and between Instruction Subindex III for the County of Athabasca and Salary Subindex III for Alberta. Atherton overcame the problem of changing proportions by changing the weights used to compile the various price relatives into Salary Subindex II and Salary Subindex III (1, p. 90).

TABLE XLIX

A COMPARISON OF INSTRUCTION SUBINDEX III FOR THE COUNTY OF ATHABASCA
TO SALARY SUBINDEX III FOR THE PROVINCE OF ALBERTA

Year	Instruction Subindex III		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	106.68	102.92	6.68%	2.92%
1961	113.73	111.00	6.60	7.85
1962	116.87	109.77	2.76	-1.10
1963	118.93	117.64	1.76	7.17
1964	121.26	115.76	1.96	-1.60
1965	123.22	120.07	1.61	3.72
Mean percentage increase			3.56	3.16

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968), p. 137. (Base shifted to 1959.)

²Table XXVI, page 64.

For this reason, it was necessary for him to splice his subindexes in 1962 (1, p. 90). Since an examination of the proportion of teachers with various levels of training, in the County of Athabasca, revealed considerable changes over the period of the study, it was considered necessary to examine the effects of these changes on Instruction Subindex II and Instruction Subindex III.

To examine the effects on Instruction Subindex II, of the changing proportion in each category, a new Instruction Subindex II was calculated using a chain base procedure. That is, the price relatives for the salary of teachers with two years of training or less and the price relatives for the salary of teachers with three years of training or more were compiled into a subindex by using weights derived from the expenditure patterns that obtained in each year of the study. The compilation is illustrated in Table L.

The Instruction Subindex II compiled with a chain base did not differ significantly from the Instruction Index II compiled with a fixed base. None of the differences between the numbers of the two series exceeded one point.

A new Instruction Subindex III was also compiled using a chain base. As illustrated in Table LI, page 108, with the exception of 1963, the differences between the subindex numbers of the two series tended to be relatively small. Furthermore, the mean increase over the previous year, as measured by the two series differed by only 0.06 per cent.

It was therefore concluded that the year-to-year comparability inherent in the fixed base weight subindex far outweighs the inaccuracies

TABLE L

EFFECT OF CHANGING WEIGHTS IN THE COMPILATION OF INSTRUCTION
SUBINDEX II FOR THE COUNTY OF ATHABASCA

Year	One or Two Years of Training		Three or More Years of Training		Instruction Subindex II	
	Price Relatives	Weight	Price Relatives	Weight	Chain Base	Fixed Base
1959	100.00	.8604	100.00	.1395	100.00	100.00
1960	104.15	.8365	101.52	.1635	103.72	103.35
1961	115.33	.7860	105.20	.2140	113.16	112.25
1962	110.97	.6846	108.71	.3154	110.26	110.28
1963	121.77	.6800	111.05	.3200	118.34	118.51
1964	118.77	.6372	111.87	.3628	116.27	116.67
1965	123.53	.6265	116.67	.3735	120.97	121.44
1966	131.13	.6475	120.35	.3525	127.33	127.85
1967	136.93	.6062	130.68	.3938	134.47	135.03
Mean percentage increase over previous year					3.84	3.89

Compiled from Table XXV, page 62.

TABLE LI
EFFECT OF CHANGING WEIGHTS IN THE COMPILATION OF INSTRUCTION
SUBINDEX III FOR THE COUNTY OF ATHABASCA

Year	One Year of Training		Two Years of Training		Three or More Years of Training		Instruction Sub-index III	
	Price	Relatives	Weight	Price	Relatives	Weight	Chain	Fixed
							Base	Base
1959	100.00		.6510	100.00		.2094	100.00	100.00
1960	103.82		.6105	102.86		.2260	103.23	102.92
1961	112.02		.5289	117.12		.2571	111.87	111.00
1962	112.74		.5142	104.34		.1704	110.04	109.77
1963	120.67		.4938	120.18		.2058	119.86	117.64
1964	119.34		.4537	113.02		.1834	115.46	115.76
1965	123.96		.4248	115.89		.2017	119.61	120.07
1966	131.48		.4687	126.55		.1788	126.68	127.07
1967	137.20		.3660	125.20		.2402	131.75	132.73
Mean percentage increase over previous year							3.59	3.65

Compiled from Table XXV, page 62, and Table XXVI, page 64.

created by changing proportions. Thus, the fixed base weight subindex appears to be an appropriate measure of the price of instruction.

Instructional Aids and Supplies

The Instructional Aids and Supplies Subindex for the County of Athabasca and the Instructional Aids and Supplies Subindex for Alberta tended to be very similar. This was to be expected, since the two subindexes were compiled from the same price data. Any differences between these two series can be attributed to different weightings of the price data. The comparison of the Instructional Aids and Supplies Subindex for the County of Athabasca and the Instructional Aids and Supplies Subindex for Alberta is illustrated in Table LII.

Plant Operation and Maintenance

The Plant Operation and Maintenance Subindex for the County of Athabasca and the Plant Operation and Maintenance Subindex for Alberta appeared very similar over their entirety, however, some of the years differed widely, especially the years 1964 and 1965. As illustrated in Table LIII, page 111, the percentage increase over the previous year shows that the differences between the series in 1964 and 1965 may be attributed to the differences in the increases from 1963 to 1964. It is possible that the very low increase in the price of plant operation and maintenance in the County of Athabasca may be attributed to a large decrease in the price of power and the smaller but still significant decrease in the price of fuel. These decreases tended to offset the increases in the other components.

TABLE LII

A COMPARISON OF THE INSTRUCTIONAL AIDS AND SUPPLIES SUBINDEX FOR
THE COUNTY OF ATHABASCA TO THE INSTRUCTIONAL AIDS AND SUPPLIES
SUBINDEX FOR ALBERTA

Year	Instructional Aids and Supplies Subindex		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	102.05	101.79	2.05%	1.79%
1961	103.36	102.89	1.28	1.08
1962	105.67	106.11	2.23	3.13
1963	107.37	107.59	1.61	1.39
1964	110.86	110.90	3.25	3.08
1965	111.52	111.46	0.59	0.50
	Mean percentage increase		1.84	1.83

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, Edmonton, Alberta, 1968), p. 108. (Base shifted to 1959.)

²Table XXX, page 70.

TABLE LIII

COMPARISON OF THE PLANT OPERATION AND MAINTENANCE SUBINDEX FOR
THE COUNTY OF ATHABASCA TO THE PLANT OPERATION AND
MAINTENANCE SUBINDEX FOR ALBERTA

Year	Plant Operation and Maintenance Subindex		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	102.58	103.52	2.58%	3.52%
1961	103.72	104.05	1.12	0.51
1962	103.48	104.87	-0.23	0.79
1963	108.59	106.68	4.94	1.73
1964	112.73	107.73	3.82	0.98
1965	118.39	113.29	5.02	5.16
	Mean percentage increase		2.87	2.22

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965) "unpublished Doctoral dissertation, University of Alberta, 1968), p. 118. (Base shifted to 1959.)

²Table XXXVII, page 80.

Conveyance

The Conveyance Subindex for the County of Athabasca tended to be similar in overall effect to the Transportation Subindex for Alberta. As illustrated in Table LIV, the mean percentage increase for the two series is very similar. The County of Athabasca series has some large fluctuations that are not in the Alberta series. This may be attributed to the year-by-year changes in the Alberta series whereas the changes in the County of Athabasca series were the result of large increases in 1960 and 1965. It is possible that the cyclical effect in the increases in the price of conveyance in the County of Athabasca may be attributed to negotiated contracts between the school bus operators and the County of Athabasca. The contract, once settled in 1960, appeared to be in effect until 1964. In 1964, the contract rates appeared to be below the average for the province as a whole, thus creating a need for a new contract and a subsequent increase in 1965.

"Other Inputs"

The "Other Inputs" Subindex for the County of Athabasca was compared to the combined Other and Auxiliary Inputs of Atherton's study. To compile these two series, the weights that reflected the importance of these inputs to the total were used. As illustrated in Table LV, page 114, the price of "Other Inputs" for the County of Athabasca tended to increase at a lower rate than "Other Inputs" for Alberta. It is possible that this was due to the large proportion of expenditures on bursaries in the County of Athabasca and the stability of the price of this input.

TABLE LIV

COMPARISON OF THE CONVEYANCE SUBINDEX FOR THE COUNTY OF ATHABASCA
TO THE TRANSPORTATION SUBINDEX FOR ALBERTA

Year	Conveyance Subindex		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	104.99	111.01	4.99%	11.01%
1961	105.98	111.01	0.94	0.00
1962	107.92	111.01	1.83	0.00
1963	108.15	111.01	0.21	0.00
1964	112.74	111.01	4.24	0.00
1965	113.20	114.90	0.41	3.50
	Mean percentage increase		2.10	2.42

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 126. (Base shifted to 1959.)

²Table XXXVIII, page 82.

TABLE LV

COMPARISON OF THE "OTHER INPUTS" SUBINDEX FOR THE COUNTY OF
ATHABASCA TO THE COMBINED "OTHER" AND AUXILIARY INPUTS
FOR ALBERTA

Year	"Other Inputs" Subindex		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	102.93	102.10	2.93%	2.10%
1961	105.02	103.92	2.03	1.78
1962	105.44	105.43	0.40	1.45
1963	109.62	107.42	3.96	1.89
1964	110.46	109.08	0.77	1.55
1965	114.64	112.14	3.77	2.80
Mean percentage increase			2.31	1.93

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), pp. 127, 129. (Base shifted to 1959.)

²Table XLII, page 88.

III. COMPARISON OF INDEXES

Education Price Index I

The Education Price Index I for the County of Athabasca was compared to the Large Area Education Price Index I for Alberta. It was found, as illustrated in Table LVI, that the two series were very similar in terms of trends and overall effects. There was, in the Education Price Index I for the County of Athabasca, an indication, in the years 1962 through 1965, of cyclical trends. It is possible that trends of this sort were common in education prices, but, because of the aggregation of educational authorities, tended to cancel out in the education prices for the province as a whole. The same trends appeared in Instruction Subindex I for the County of Athabasca, and in fact, the trends in the Education Price Index I for the County of Athabasca were probably reflections of the salary trends.

Education Price Index II

The Education Price Index II was compared to the Large Area Education Price Index for Alberta. With some exceptions, the indexes tended to be quite similar as illustrated in Table LVII, page 117. Again, what appeared to be cyclical price changes appeared, in 1962 through 1964, in the Education Price Index II for the County of Athabasca. These price changes, although smaller in degree, are very similar to those in the Instruction Subindex II for the County of Athabasca.

TABLE LVI

COMPARISON OF EDUCATION PRICE INDEX I FOR THE COUNTY OF ATHABASCA
TO LARGE AREA EDUCATION PRICE INDEX I FOR ALBERTA

Year	Education Price Index I		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	106.18	106.05	6.18%	6.05%
1961	111.36	112.84	4.88	6.40
1962	114.60	113.93	2.91	0.97
1963	117.21	119.26	2.28	4.68
1964	121.61	119.63	3.75	0.31
1965	124.73	124.54	2.57	4.10
Mean percentage increase			3.76	3.75

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 137. (Base shifted to 1959.)

²Table XLIII, page 89.

TABLE LVII

COMPARISON OF EDUCATION PRICE INDEX II FOR THE COUNTY OF ATHABASCA
TO LARGE AREA EDUCATION PRICE INDEX II FOR ALBERTA

Year	Education Price Index II		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	105.60	105.27	5.60%	5.27%
1961	110.32	110.28	4.46	4.76
1962	112.75	109.59	2.21	-0.63
1963	114.91	114.36	1.91	4.35
1964	118.17	113.72	2.84	-0.56
1965	120.20	118.10	1.72	3.85
Mean percentage increase			3.12	2.84

¹P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968) p. 137. (Base shifted to 1959.)

²Table XLIV, page 91.

Education Price Index III

The Education Price Index III for the County of Athabasca was compared to the Large Area Education Price Index III for Alberta. The two series were quite similar in many respects as is illustrated in Table LVIII. The increases in the education prices for the County of Athabasca tend to be generally lower than the increases for Alberta, This trend, as well as the decreases in 1962 and 1964, was in evidence in Instruction Subindex III for the County of Athabasca.

IV. EDUCATION PRICE INDEXES FOR THE COUNTY OF ATHABASCA

The Education Price Indexes for the County of Athabasca provided evidence for the fact that inflation has had a significant impact on the expenditures of the County of Athabasca. Education Price Index I, Education Price Index II, and Education Price Index III--based on alternate assumptions regarding teacher training and quality--showed an average increase of 3.98 per cent, 3.20 per cent and 3.08 per cent respectively over the period 1959 through 1967. Deflating the expenditures helped account for a fairly large proportion of the increases in expenditures.

As illustrated in Table LIX, page 120, the current dollar values of operational expenditures appeared to rise by an average of 7.47 per cent in the County of Athabasca over the time period 1959 through 1967. The largest increase occurred between 1966 and 1967, and amounted to 14.72 per cent. The smallest increase occurred between 1963 and 1964 and amounted to 1.13 per cent. However, when the Education Price

TABLE XLIII

COMPARISON OF EDUCATION PRICE INDEX III FOR THE COUNTY OF ATHABASCA
TO LARGE AREA EDUCATION PRICE INDEX III FOR ALBERTA

Year	Education Price Index III		Percentage Increase over Previous Year	
	Alberta ¹	Athabasca ²	Alberta	Athabasca
1959	100.00	100.00		
1960	105.49	105.04	5.49%	5.04%
1961	110.08	109.61	4.35	4.35
1962	112.40	109.32	2.11	-0.26
1963	114.47	113.90	1.84	4.19
1964	117.45	113.23	2.60	-0.53
1965	119.65	117.37	1.87	3.66
Mean percentage increase			3.04	2.74

¹ P. J. Atherton, "The Impact of Rising Price Levels on Expenditures for School Operation in Alberta: 1957-1965" (unpublished Doctoral dissertation, University of Alberta, 1968), p. 137. (Base shifted to 1959.)

² Table XLV, page 92.

TABLE LIX
INCREASES IN OPERATIONAL EXPENDITURES

Year	Operational Expenditure in Current Dollars ¹	Percentage Increase over Previous Year
1959	\$ 799,874	
1960	906,752	13.36%
1961	941,418	3.82
1962	982,735	4.39
1963	1,003,363	2.10
1964	1,014,663	1.13
1965	1,091,080	7.53
1966	1,230,022	12.73
1967	1,411,040	14.72
Mean percentage increase over previous year		7.47

¹ Source: Table XII, page 38.

Indexes were used to maintain constant dollar values, a significant change occurred.

With Education Price Index I as a deflator, illustrated in Table LX, the operational expenditures were expressed in constant, 1959, dollars. The average increase over the previous year amounted to 3.37 per cent with a high of 8.95 per cent between 1966 and 1967 and a maximum decrease of 2.46 per cent between 1962 and 1963. This series suggested that inflation accounted for an average of about 55 per cent of the increase in operational expenditures.

With Education Price Index II as a deflator, illustrated in Table LXI, page 123, the average increase in operational expenditures, in constant, 1959, dollars, became 4.13 per cent. The largest year-to-year increase amounted to 9.97 per cent and occurred between 1966 and 1967. The largest year-to-year decrease amounted to 2.16 per cent and occurred between 1962 and 1963. Inflation in this series accounted for about 45 per cent of the increase in operational expenditures.

With Education Price Index III as a deflator, illustrated in Table LXII, page 124, the average increase in operational expenditures, in constant, 1959, dollars, became 4.25 per cent. The maximum year-to-year increase was 10.65 per cent between 1966 and 1967 and the maximum year-to-year decrease was 2.01 per cent between 1962 and 1963. Inflation in this series accounted for about 43 per cent of the average year-to-year increase in expenditures.

It is interesting to note that in those years where a decrease in expenditures appeared, 1961 and 1963, from Table XIII, page 39,

TABLE LX
OPERATIONAL EXPENDITURES DEFLATED WITH EDUCATION PRICE INDEX I

Year	Operational Expenditures in Constant (1959) Dollars ¹	Percentage Increase over Previous Year
1959	\$799,874	
1960	855,023	6.89%
1961	834,294	-2.42
1962	862,578	3.39
1963	841,323	-2.46
1964	848,168	0.81
1965	876,088	3.29
1966	950,631	8.51
1967	1,035,701	8.95
Mean percentage increase over previous year		3.37%

¹ Source: Operational expenditures from Table LIX, deflated with Education Price Index I.

TABLE LXI
OPERATIONAL EXPENDITURES DEFLATED WITH EDUCATION PRICE INDEX II

Year	Operational Expenditures in Constant (1959) Dollars ¹	Percentage Increase over Previous Year
1959	\$799,874	
1960	861,358	7.69%
1961	853,661	-0.89
1962	896,738	5.05
1963	877,372	-2.16
1964	892,246	1.70
1965	923,861	3.54
1966	998,719	8.10
1967	1,098,257	9.97
Mean percentage increase over previous year		4.13

¹Source: Operational Expenditures from Table LIX deflated with Education Price Index II.

TABLE LXII
OPERATIONAL EXPENDITURES DEFLATED WITH EDUCATION PRICE INDEX III

Year	Operational Expenditures in Constant (1959) Dollars ¹	Percentage Increase over Previous Year
1959	\$799,874	
1960	863,243	7.92%
1961	858,880	-0.51
1962	898,953	4.67
1963	880,916	-2.01
1964	896,108	1.72
1965	929,607	3.74
1966	1,002,136	7.80
1967	1,108,872	<u>10.65</u>
Mean percentage increase over previous year		4.25

¹ Source: Operational expenditure from Table LIX deflated with Education Price Index III.

the proportion of expenditures for instruction increased over the previous year, while the proportion decreased over the previous year in such categories as instructional aids and supplies, and plant operation and maintenance. It is possible that this expenditure pattern is evidence of the necessity to cut back on other expenditures to meet rising salaries.

V. SUMMARY AND CONCLUSIONS

In general, the subindexes and indexes for the price of educational inputs for the County of Athabasca, were similar to the corresponding subindexes and indexes for the price of educational inputs for the whole of Alberta. The County of Athabasca indexes and subindexes tended to differ from the Alberta indexes and subindexes in two basic ways: (i) the average year-to-year increase tended to be lower for the County of Athabasca, and (ii) wider year-to-year fluctuations were more apparent in the County of Athabasca indexes.

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CHAPTER VI

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

I. INTRODUCTION

This study was an attempt to test the degree of applicability of the Alberta Education Price Index to the County of Athabasca. To test this, it was necessary to compile an Education Price Index for the County of Athabasca and compare this index to the Education Price Index for Alberta.

II. DEGREE OF APPLICABILITY OF THE ALBERTA EDUCATION PRICE INDEXES

As a general indicator of the price changes in the County of Athabasca over the period 1959 through 1965, the Alberta Education Price Indexes appeared to be reasonably suitable, although tending to be slightly high. Large Area Education Price Index I was particularly suitable as an indicator of overall price changes. The others in order of suitability as indicators of price changes were Large Area Education Price Index II and Large Area Education Price Index III.

In terms of applicability on a year-by-year basis as price deflators, the Alberta Education Price Index is less suitable. Large Area Education Price Index I could be applied, without creating a large error, to the years 1959, 1960, 1961, 1962, and 1965. Large Area

Education Price Index II could be applied, without creating a large error, to the years 1959, 1960, 1961, and 1963. Large Area Education Price Index III could be applied, without creating a large error, to the years 1959, 1960, 1961, and 1963.

III. IMPLICATIONS

The results of this study imply that the impact of inflation on the County of Athabasca, although similar to the impact of inflation on the provincial education system, was not exactly the same. This suggests that the County of Athabasca may have some control over the price levels of educational inputs and in fact might be able to take steps to reduce inflationary effects. However, instruction prices seem particularly closely related to total educational prices, and the competitive nature of teacher recruitment might limit the efforts of the County of Athabasca to control inflation.

From an economic point of view, it appears, from an examination of subindexes, that an economy might be achieved in the County of Athabasca by a substitution. Since the price of instruction is rising rapidly while the price of instructional aids and supplies is rising slowly, an increased purchase of aids and supplies to replace some instruction, if these two can be considered substitutes in any way, might achieve some measure of economy over a long time period.

Similarly, from an economic point of view, Table XXVI, page 64, provides evidence for the fact that a less rapid increase in salaries obtains for teachers with two years of training. This would imply that

a policy of hiring these teachers would eventually lead to a saving in the price of instruction.

There is strong evidence that the County of Athabasca education system is very dependent on labour inputs. Since labour inputs appear to increase in price at an accelerated pace, any substitution of technological innovations for labour that can be achieved, will result in less rapidly increasing prices. This in turn will lead to an economy.

IV. RECOMMENDATIONS

It is recommended that a parallel study to this one be conducted on an Alberta school authority that is different from the County of Athabasca. A study using an authority with a high assessment per pupil might point out the dependence or independence between educational prices and the availability of funds as well as indicating the general applicability of the Alberta Education Price Indexes to other school authorities.

It is recommended that further research be conducted to determine the relationship between instructional salaries and educational prices. Conclusive evidence of this relationship could prove very useful in budgeting in a school authority.

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APPENDIX

MUTUAL PROPANE LTD.,

PHONE 424-4441

10582-110th Street, Edmonton, Alberta Zone 17

February 10, 1969

Mr. Donald Richards
Department of Ed. Admin.
Faculty of Education
University of Alberta
Edmonton, Alberta

Dear Sir:

The enclosed will confirm the price adjustment net cost for propane supplied to the various schools in the County of Athabasca.

1959	12 cents per gallon
1960	12 cents per gallon
1961	12 cents per gallon
1962	11.7 cents per ballon
1963	11.8 cents per gallon
1964	11.0 cents per gallon
1965	9.8 cents per gallon
1966	10.2 cents per gallon
1967	10.5 cents per gallon

One would also have to evaluate the cost of free service to the equipment. These trips we evaluate at \$35.00 each but would be near to \$50.00 per service trip at market values.

As indicated by the years you will also recognize that increased sales volume has reflected in a lower price to the shareholder customer. We anticipate little change from the present net price except if there should be a drastic price change at the supplier level.

May we in closing thank you for your inquiry and for the support by the County of this "Mutual" company.

Yours truly,

Harold L. Osland
Manager

MID-WEST SUPPLIES

February 13, 1969

Mr. Donald M. Richards,
Department of Educational Administration,
Faculty of Education,
University of Alberta,
Edmonton, Alberta.

Dear Mr. Richards:

We would suggest that you use the Dominion Bureau of Statistics figures on soaps and waxes as your source of information.

The general trend in the industry has been to pass along increased costs to the consumer (e.g. freight increases, federal sales tax, etc.).

The Dominion Bureau of Statistics figures should provide an accurate guide.

Yours truly,

D. E. McCambley
General Manager

PLAINS-WESTERN GAS & ELECTRIC CO. LTD.
9924 - 63rd Avenue, Edmonton 81, Alberta

March 4, 1969

Mr. Don Richards
Dept. of Education, Administration
Faculty of Education
University of Alberta.
Edmonton 61, Alta.

Dear Mr. Richards:

Some time ago you contacted me for information concerning the cost of living index as applicable to gas heating utility rates in the Athabasca area.

These figures were to be used in a study concerning the changing cost of education in that area, comparing 1959 to 1966, and using, of course, 1959 as the base or 100.

We gave the figures to you verbally, and you requested a confirmation. That is the purpose of the letter.

To arrive at the figure I gave you (1968 - 94.13% of 1959 costs), I used:

- 1/ All types of revenue--residential, commercial and industrial.
- 2/ a/ For 1959, our total volume and revenue from financial statements.
- b/ For 1966, our total volume and revenue from actual billings only.

Therefore, if you wanted a really accurate figure, I should have used actual billings only, for both years. This would mean that 1968 heating costs are 94.4% of 1959 costs. However, the percentage difference from the 94.13% figure I gave you is negligible.

I trust that we have been of some help to you, Don. If you eventually come up with any statistics on the comparison of 1959 to 1966 education costs in the Athabasca area, I would appreciate receiving a copy of your report, if such figures are not confidential.

Very truly yours,

Plains-Western Gas & Electric Co. Ltd.
D. W. Dean
Accountant

THE EDMONTON JOURNAL

January 21, 1969.

Mr. Donald M. Richards,
 Department of Ed. Admin.,
 Faculty of Education,
 University of Alberta,
 Edmonton, Alberta.

Dear Sir:

Replying to your letter, we are pleased to give you advertising rates for the period 1959 to 1967.

The average teacher ad would be about two inches in length and the cost per line and circulation is as follows:

<u>Year</u>	<u>Line rate</u>	<u>Circulation</u>	<u>Cost per 2" ad</u>
1959	\$0.32	103,000	\$ 8.96
1960 &			
1961	.35	107,000	9.80
1962	.39	116,600	10.92
1963	.41	122,800	11.48
1964	.43	129,000	12.04
1967	.46	137,400	12.88

As you will note, the cost of advertising increases because more households are receiving the paper and consequently production and supply costs go up considerably. Therefore, to analyze this in the manner outlined in your letter, you will have to break the cost down to individual households.

We trust that this will explain your enquiry, but should there be anything further do not hesitate to drop in or phone me.

Yours very truly,

EDMONTON JOURNAL,

W. H. Peter, Manager,
 Classified Advertising.

Alberta Government Telephones,
Box 600
Athabasca, Alberta
March 27, 1969

Mr. Donald Richards
Dept. of Ed. Admin.
University of Alberta
Edmonton, Alberta

Dear Sir:

With reference to your letter of March 24, 1969 please be advised of the following.

The telephone rates (monthly billing charge) remained constant in Athabasca area and in the Province of Alberta from 1926 to some time in 1967. A rate increase was granted by the Public Utilities Board March 3, 1967 and went into effect later that year.

The amount of the increase for the Athabasca area was as follows:

Previous to 1967	Present rate
Business rate - \$4.75	Business rate - %5.50
Residential rate - 3.00	Residential rate - 3.50

(note these quotations are for a standard black wall telephone)

Please note that the above information applies only to Alberta Government Telephone rates and would not apply to rates charged by Rural Mutual Companies. The Mutual Companies have in most cases followed the trend set by Alberta Government Telephones.

Please write or phone (675-2201) if more information is required.

Yours truly,

Dale H. Swanson,
Plant Manager - Athabasca

CANADA POST OFFICE

Athabasca, Alberta,
March 26, 1969

Mr. Donald M. Richards,
Dept. of Ed. Admin.,
University of Alberta,
Edmonton, Alberta.

Dear Sir:

I would like to inform you that there was no substantial change in postal rates during the time period 1959-1967. There were a few minor changes during that period, one being the rates on third class, which I believe went up from 3 cents for the first two ozs. to 4 cents for the first two ozs.

The big change came in 1968. This included all classes of mail.

For you information.

Yours truly,

Don McLevin,
Postmaster,
Athabasca, Alberta.

(From Moyer Division, Vilas Industries)

List of Instructional Aids and Supplies

Items	1966	1967
Teachers Desk #22	104.50	115.50
Students Desk #13-110	23.75	same
Chalkboard (per sq. ft.)	.75	same
Maps	20.25	23.75
Globes	13.25	14.95
Duplicators	275.00	259.50
Projectors	107.00	130.00
Duplicating Paper	4.05	same
Place Value Charts #775	5.40	6.35

(From the School Book Branch)

List of Books

Titles	1965	1966	1967
Friends and Neighbors	2.20	2.30	2.20
Streets and Roads	2.35	2.40	2.30
Canada and Her Neighbors	3.30	3.30	3.40
Canada in the Western World	3.45	3.50	3.50
Thorndike-Barnhart H.S. Dictionary	5.80	5.95	5.90
Websters Elementary Dictionary	3.60	4.90	4.90
Pupils Own Vocabulary Speller #3	1.85	2.00	2.00
Words and Ideas bk. II	2.50	2.60	2.60
"B" is for Betty	4.25	4.25	3.30
Little Toot	4.10	3.35	2.95
Beau Geste	2.25	2.25	2.15
My Friend Flicka	3.50	3.50	2.95

Note

Changes in the School Book Branch pricing policy (commencing April 1, 1967) are responsible for lower prices in 1967.

School Book Branch,
per M.S.F.

County of Athabasca No. 12
Box 540,
Athabasca, Alberta.

February 6, 1969.

Mr. Donald M. Richards,
Dept. of Ed. Admin.,
Faculty of Education,
University of Alberta,
Edmonton, Alberta.

Dear Don:

Further to your letter of January 20, addressed to W. L. Douglas, this is to confirm that changes in the rates to private contractors would also reflect in the rates of County-owned buses.

We trust that the above is the information which you require.

Yours very truly,

R. A. Wilkinson,
Secretary-treasurer.

RAW/dme

County of Athabasca No. 12,
Box 540,
Athabasca, Alberta.

February 5, 1969.

Mr. Donald M. Richards,
Dept. of Ed. Admin.,
Faculty of Education,
University of Alberta,
Edmonton, Alberta.

Dear Don:

Your letter of January 18, regarding breakdowns in percentages for Utilities and combined Other and Auxiliary Services would appear to be in order. Although these may vary from year to year, they would represent a reasonable average.

Yours very truly,

R. A. Wilkinson,
Secretary-treasurer.

RAW/dme

B29926